

Appendices:

- A – Produced water data and estimate detail
- B – Water demand data and estimate detail
- C – Desalination conceptual design and cost estimate detail
- D – Forced evaporation disposal conceptual design and cost estimate detail
- E – Broad scale implementation estimates and financial analysis detail

2. Prepare Executive Summary Presentation: We will prepare an executive summary presentation of the final report findings and recommendations that the OWRB Produced Water Committee can use/adapt to communicate to stakeholders and third parties. We will target a 20 to 30 minute presentation duration targeted towards general audiences. We will submit a draft presentation along with the draft Final Study Report described in the previous activity. We will review and adjudicate OWRB's comments at the same review web conference as well and will finalize and submit the final presentation along with the Final Study Report.

Deliverables

- Final Study report (draft and final)
- QRF table documenting adjudication of reviewer comments
- Executive Summary Presentation (draft and final)

Assumptions and Clarifications

- Draft report will be submitted in MS Word 2013 read-write format to facilitate electronic editing/comments. The final report will be submitted in Adobe PDF read-only format. The Executive Summary Presentation will be submitted in MS PowerPoint 2013.
- An allowance of 20 business days is included for OWRB's review of the draft report. OWRB will establish an internal "chain of command" to conduct the review, and, prioritize its comments, and will provide one consolidated set of written comments on CH2M's QRF or similar mutually agreed format to facilitate tracking and adjudication of comments.

Project Management and Administration

Objective

Provide management, coordination and project controls to deliver the work in accordance with the project objectives, schedule and budget.

Activities

1. Project kickoff: CH2M will facilitate a project kickoff web conference with OWRB Produced Water Committee members and other stakeholders invited by OWRB. The kickoff is assumed to last two hours or less. Agenda will include but not be limited to:
 - Confirm objectives, requirements and other critical success factors
 - Confirm stakeholders
 - Review scope and approach
 - Review information furnished by OWRB and confirm other assumptions
 - Review schedule and milestones

- Quality assurance/review strategy
 - Project communications/meetings
2. Project management and administration:
- a. Charter project team: CH2M will prepare project instructions, including the project quality plan, and charter team members for efficient and effective delivery of the work. Draft project instructions will be reviewed with OWRB at the first kickoff/status call insofar as it addresses interfaces/coordination between OWRB and CH2M.
 - b. Project status meetings: CH2M will facilitate a weekly project status call with OWRB representative to review progress, actions and interim deliverables as required.
 - c. Change management: CH2M will evaluate trends and scope change, maintain a project change/trend register, and work proactively with OWRB representatives to mitigate or reduce impacts of change on the schedule and budget to the extent practicable.
3. Project controls: CH2M will develop baseline budget and schedule, track performance and trends against baseline, prepare forecasts, and prepare monthly reports.

Deliverables

- Project Change Log
- Action Register

Assumptions and Clarifications

- This is budgeted as a level of effort task assuming a project duration of 28 weeks.
- CH2M will use its own systems and tools for project controls and reporting. If OWRB has specific requirements they will provide this at the beginning of the project. Deviation from CH2M project control standards may result in a project change.

General Assumptions and Clarifications

The following general assumptions were made during the preparation of this ROM:

- We anticipate hosting regular progress calls with OWRB stakeholders to address data gaps and review/collaborate and endorse key approaches, assumptions and findings.
- The success of the study will depend on constructive and timely collaboration by OWRB and its individual Produced Water Committee members to develop and implement the approach to this study to maximize the technical veracity of the methods and findings and optimize usefulness of the study to inform constructive debate and policymaking.
- OWRB and individual Produced Water Committee members and stakeholders will provide data in their possession relevant to the study in a usable format to CH2M.
- As required, the OWRB Produced Water Committee will afford sufficient agenda time at their scheduled meetings to review study materials. CH2M will coordinate this in advance with the committee chair.

Project Team

CH2M's project manager and primary point of contact is:

Anna Childers
CH2M HILL Engineering, Inc.
401 S. Boston Ave.
Suite 330
Tulsa, OK 74103-44253
USA
C +1 918 607 3647
Anna.Childers@CH2M.com

CH2M's Principal Investigator is:

Michael Dunkel
CH2M HILL Engineering, Inc.
14701 St. Mary's Lane
Suite 300
Houston, TX 77079-2923
USA
C +1 469 585 6468
Michael.Dunkel@CH2M.com

Subject matter experts and other project support staff will be engaged as needed. Resumes are available upon request.

Commercial Proposal

Schedule

CH2M understands that the ORWB would like to demonstrate progress on the subject of beneficial produced water reuse/alternate disposal and to plan follow-on actions prior to the end of 2016. We stand ready to begin work upon authorization.

The estimated time for the project is 28 weeks. Assuming a start date of June 6, the estimated completion would be approximately December 16th, 2016. A preliminary schedule is included in Attachment A.

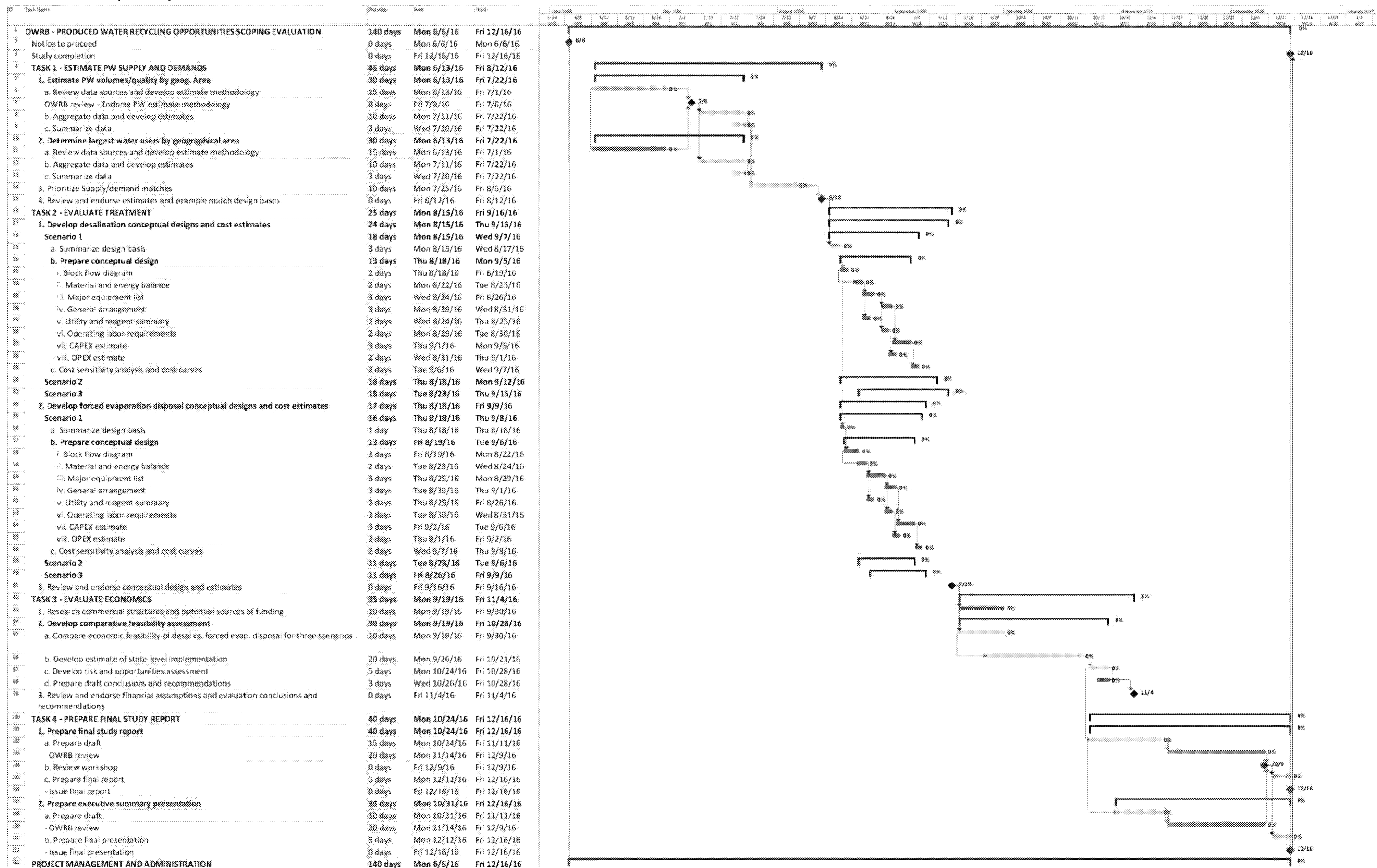
Target milestones are:

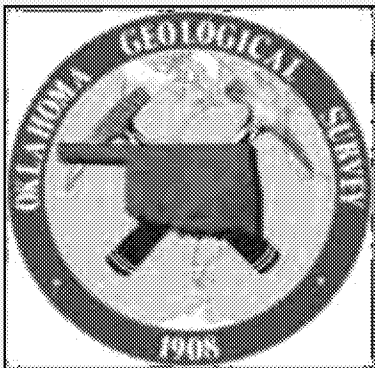
- | | |
|---|-------------------|
| • Kickoff web conference | June 10, 2016 |
| • Meet to review Produced water supply and reuse demand estimates | August 12 |
| • Review representative treatment/disposal estimates | September 16 |
| • Review preliminary findings | November 4 |
| • Submit draft report/presentation for final review | November 11 |
| • Issue final report/presentation | December 16, 2016 |

Draft Statement of Work
ROM – Produced Water Recycling Opportunities Scoping Evaluation
Page 12

The main schedule risks are identifying and obtaining necessary data in useful format in a timely manner, scheduling of progress meetings to obtain necessary direction and endorsement from OWRB, and OWRB's efficient and effective review of the final report and presentation to close out the study.

ATTACHMENT A – Proposed Project Schedule





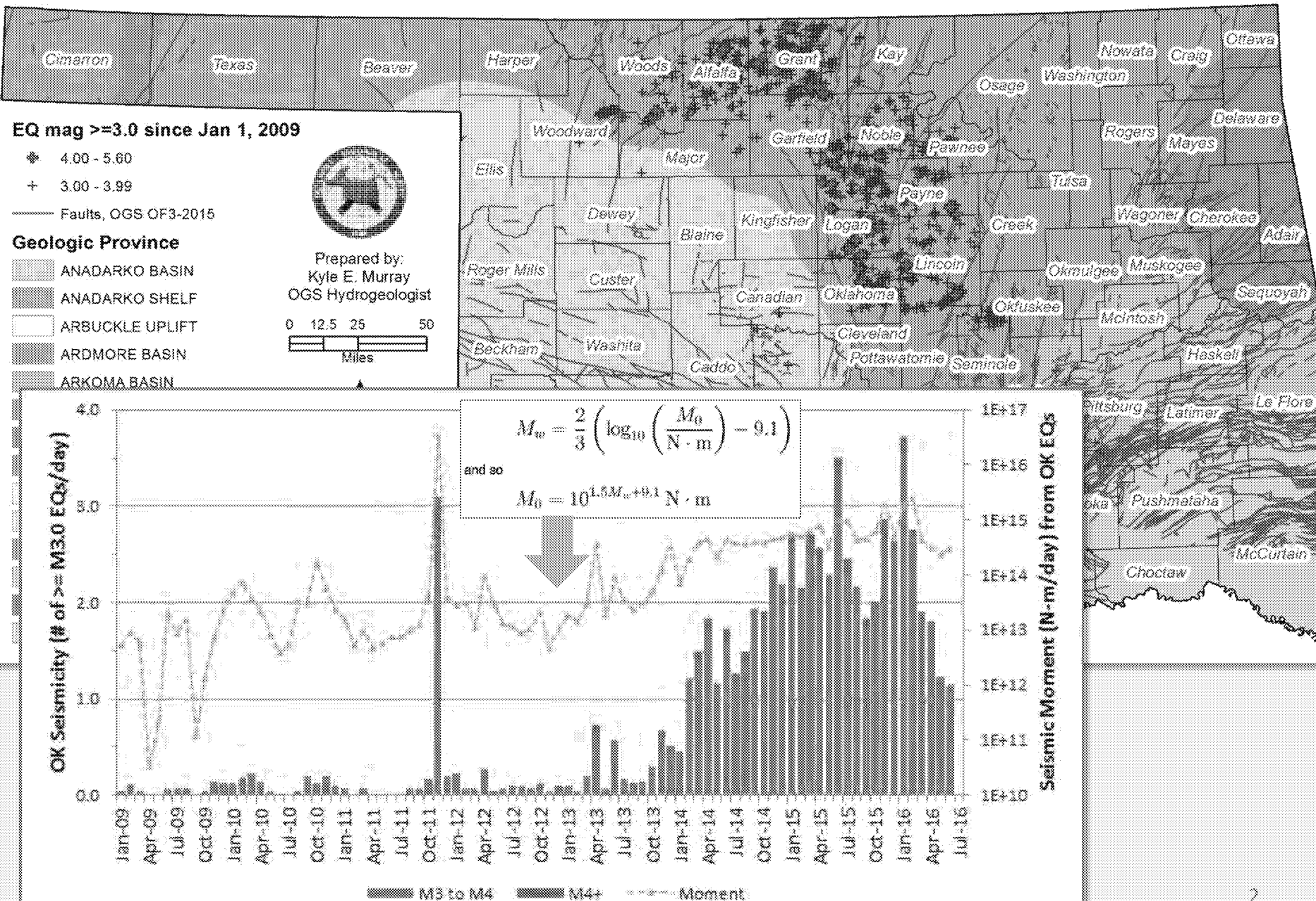
The UNIVERSITY of OKLAHOMA
Newbourn College of Earth and Energy
ConocoPhillips School of Geology and Geophysics
ConocoPhillips

Kyle E. Murray, PhD, Hydrogeologist

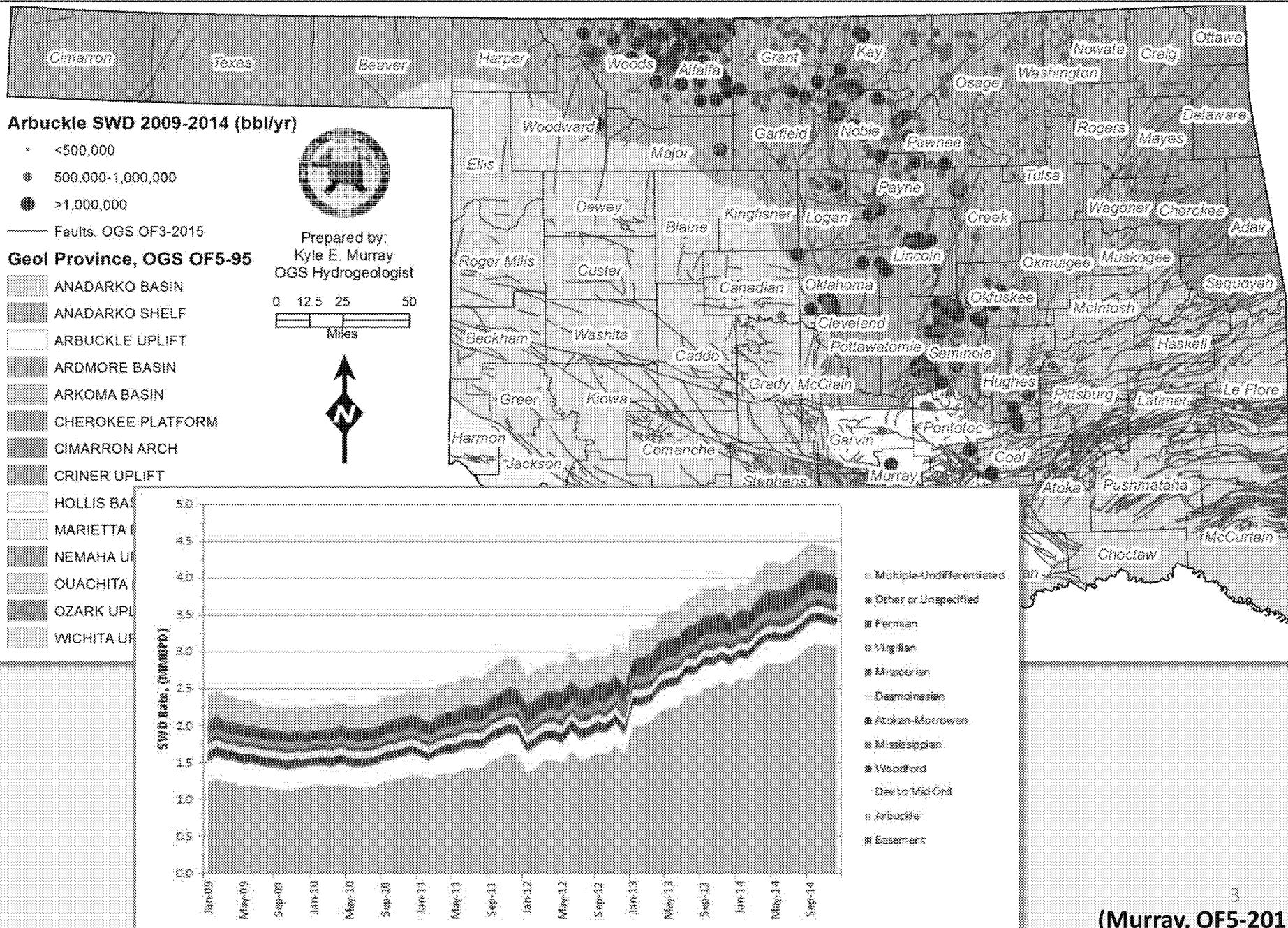
Presents:

Quantity and Quality of Produced Water in Oklahoma

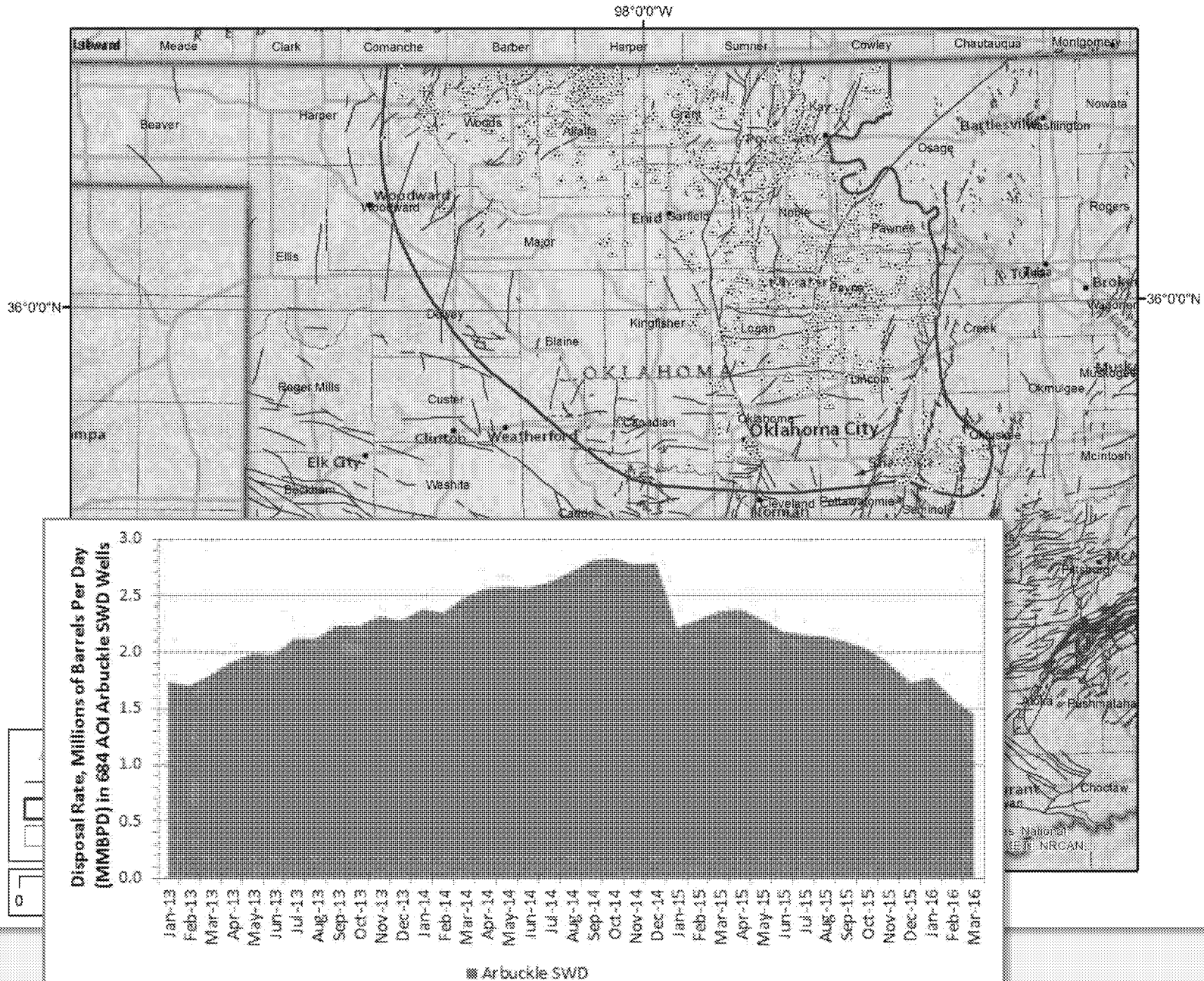
Earthquakes Mag ≥ 3.0 , Jan 1, 2009–Jun 7, 2016



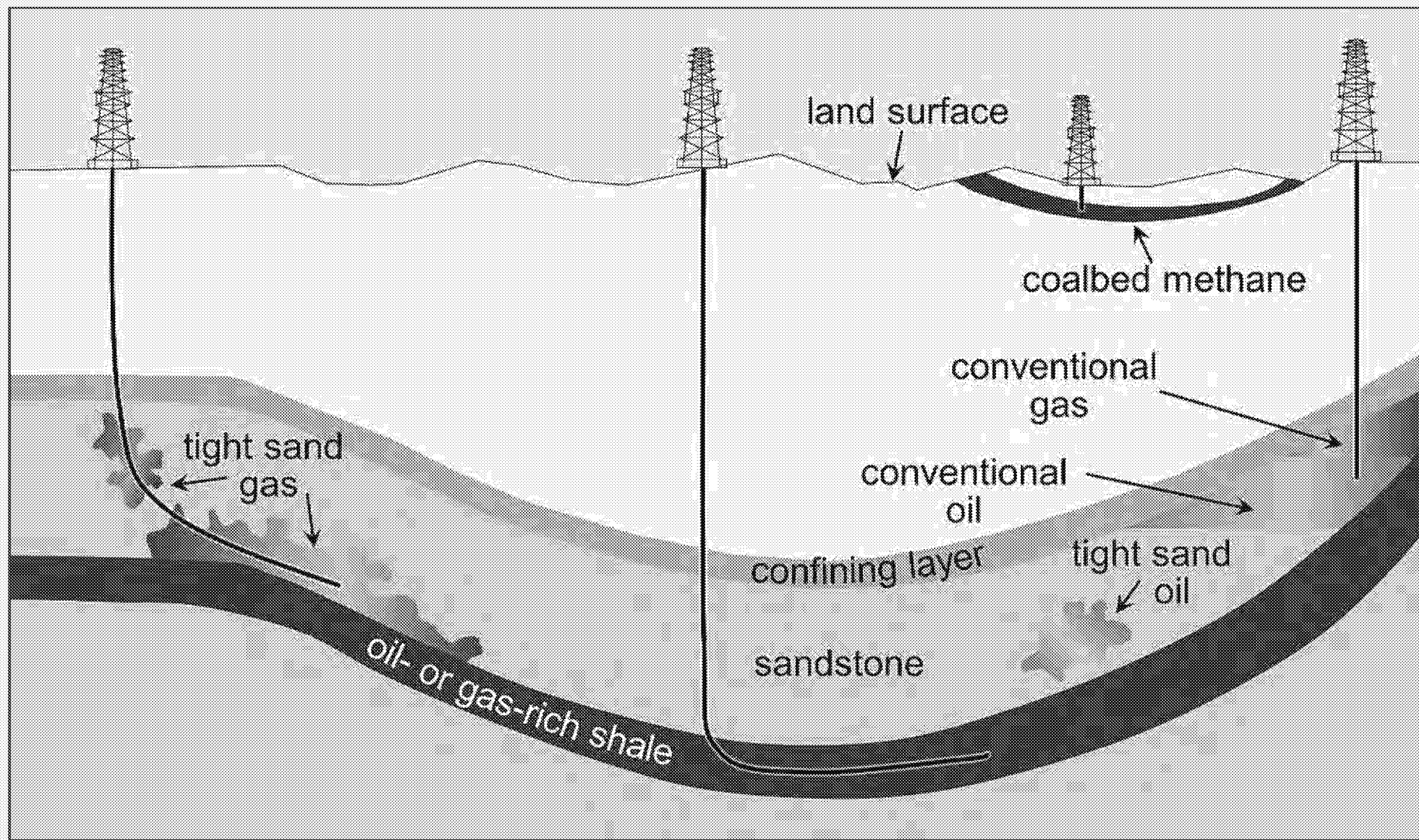
Arbuckle SWD in Oklahoma, 2009–2014



Arbuckle SWD in Area of Interest (AOI) Jan 2013–Mar 2016



Conventional vs. Unconventional Production

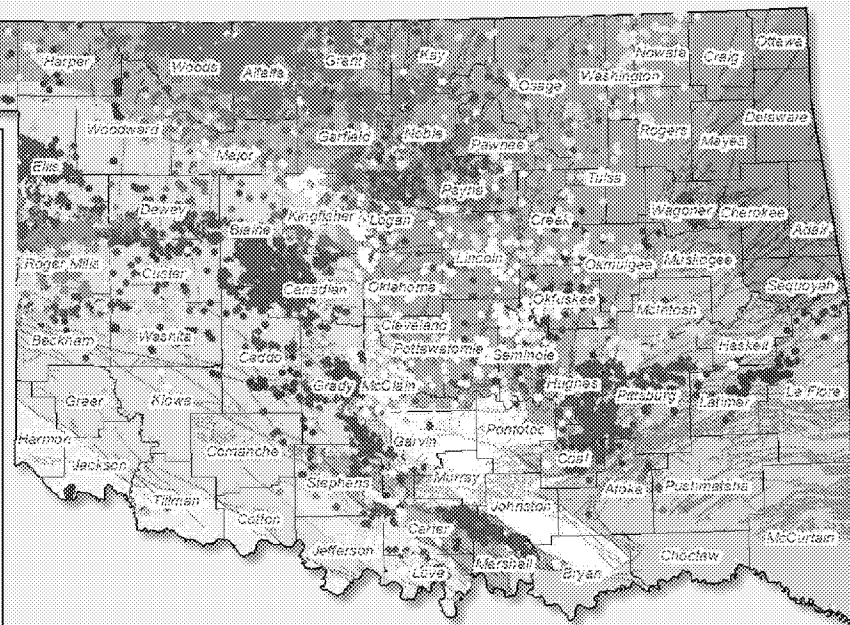


Zone	Group	Formation
Multiple-Undiff		
Other or Unspec.		
Permian		Garber
	Chase	Brown Dolomite
	Council Grove	Pontotoc
	Admire	Belveal
Virgilian	Wabaunsee	Cisco Lime
		Pawhuska
	Shawnee	Endicott
	Douglas	Tonkawa
Missourian	Hoxbar	Lansing
		Cottage Grove
		Kansas City
		Hogshooter
		Layton
		Cleveland
Desmoinesian	Marmaton - Deese	Oswego
		Skinner
	Krebs - Deese	Red Fork
		Burbank
		Bartlesville
		Bartshorne
Atokan-Morrowan	Atoka	Gilcrease
		Dutcher
		Cromwell
		Wamsley
Mississippian	Meramec	Manning
		Caney
		Miss Lime
		Miss Chat
		St. Louis
		Mayes
		Sycamore
		Kinderhook
		Upper Devonian
		Woodford
Dev to Mid Ord	Hunton	Misener
		Frisco
		Bois d'Arc
		Henryhouse
	Cincinnatian	Chimneyhill
		Sylvan
		Viola
	Simpson	Bromide
		Wilcox
		McLish
Arbuckle	Arbuckle Group	Oil Creek
		West Spring Creek
		Kindblade
		Cool Creek
		McKenzie Hill
		Butterfly dolomite
		Signal mountain
		Royer dolomite
Basement & Crystalline Rock	Pre-Cambrian	Fort sill limestone
		Reagan
		Granite

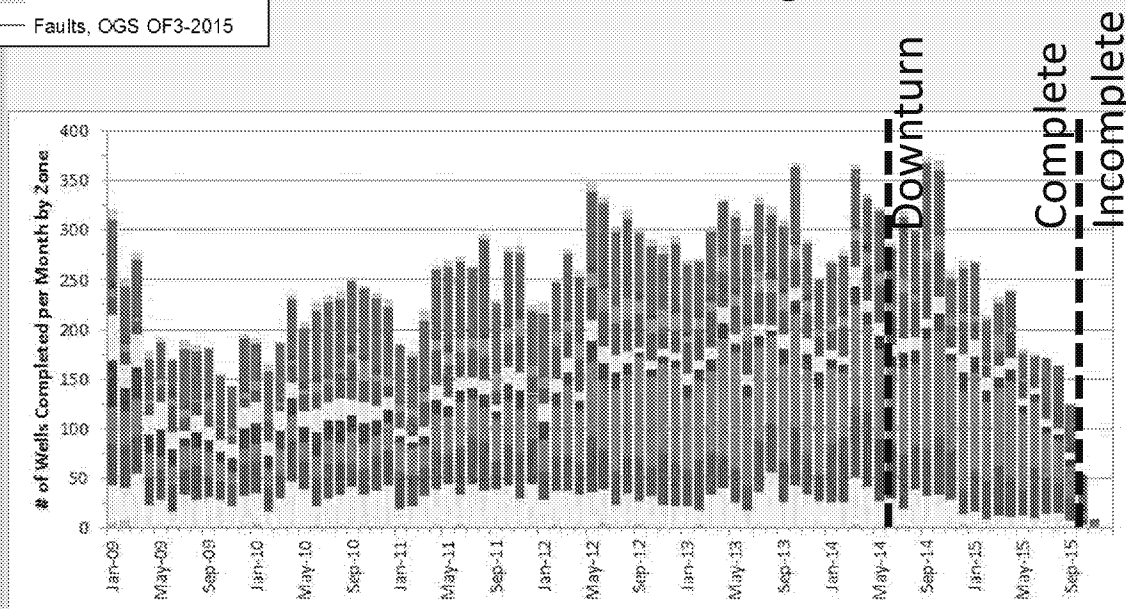
Granite Wash

Geologic Province

- ANADARKO BASIN
- ANADARKO SHELF
- ARBUCKLE UPLIFT
- ARDMORE BASIN
- ARKOMA BASIN
- CHEROKEE PLATFORM
- CIMARRON ARCH
- CRINER UPLIFT
- HOLLIS BASIN
- MARIETTA BASIN
- NEMAHIA UPLIFT
- OUACHITA MOUNTAINS UPLIFT
- OZARK UPLIFT
- WICHITA UPLIFT
- Faults, OGS OF3-2015



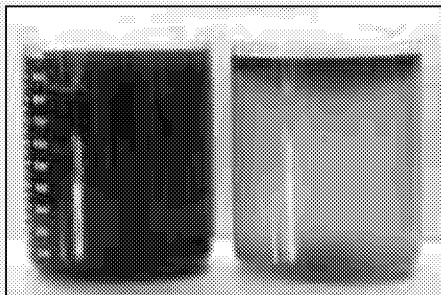
Wells that Started Producing from 2009–2015



Completions by Zone and by Month, 2009–2015

(Murray, 2016 – in preparation)

"Calibrated" ratios used to calculate produced H₂O from 2009–2015



Multiple-Undiffer., med=3.36

Other or Unspecified, med=7

Permian, med=9.43

Virgilian, med=2.76

Missourian, med=1.63

Des Moinesian, med=3.51

Atokan-Morrowan, med=4.75

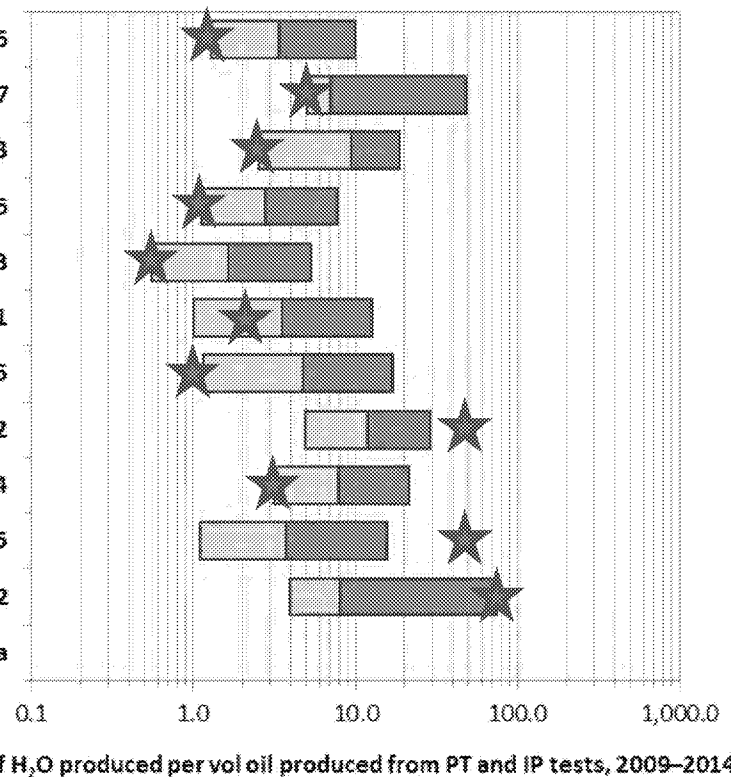
Mississippian, med=12

Woodford, med=7.94

Dev to Mid Ord, med=3.75

Arbuckle, med=8.02

Basement, no data



ratio of H₂O produced per vol oil produced from PT and IP tests, 2009–2014

Multiple-Undiffer., med=2.8

Other or Unspecified, med=36

Permian, med=7.43

Virgilian, med=10.62

Missourian, med=3.02

Des Moinesian, med=9.85

Atokan-Morrowan, med=6.36

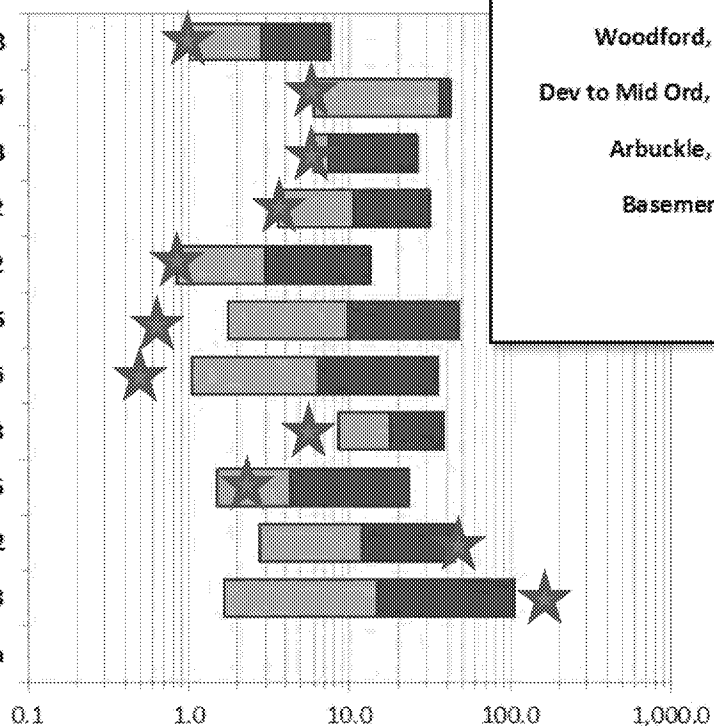
Mississippian, med=17.73

Woodford, med=4.25

Dev to Mid Ord, med=12

Arbuckle, med=14.83

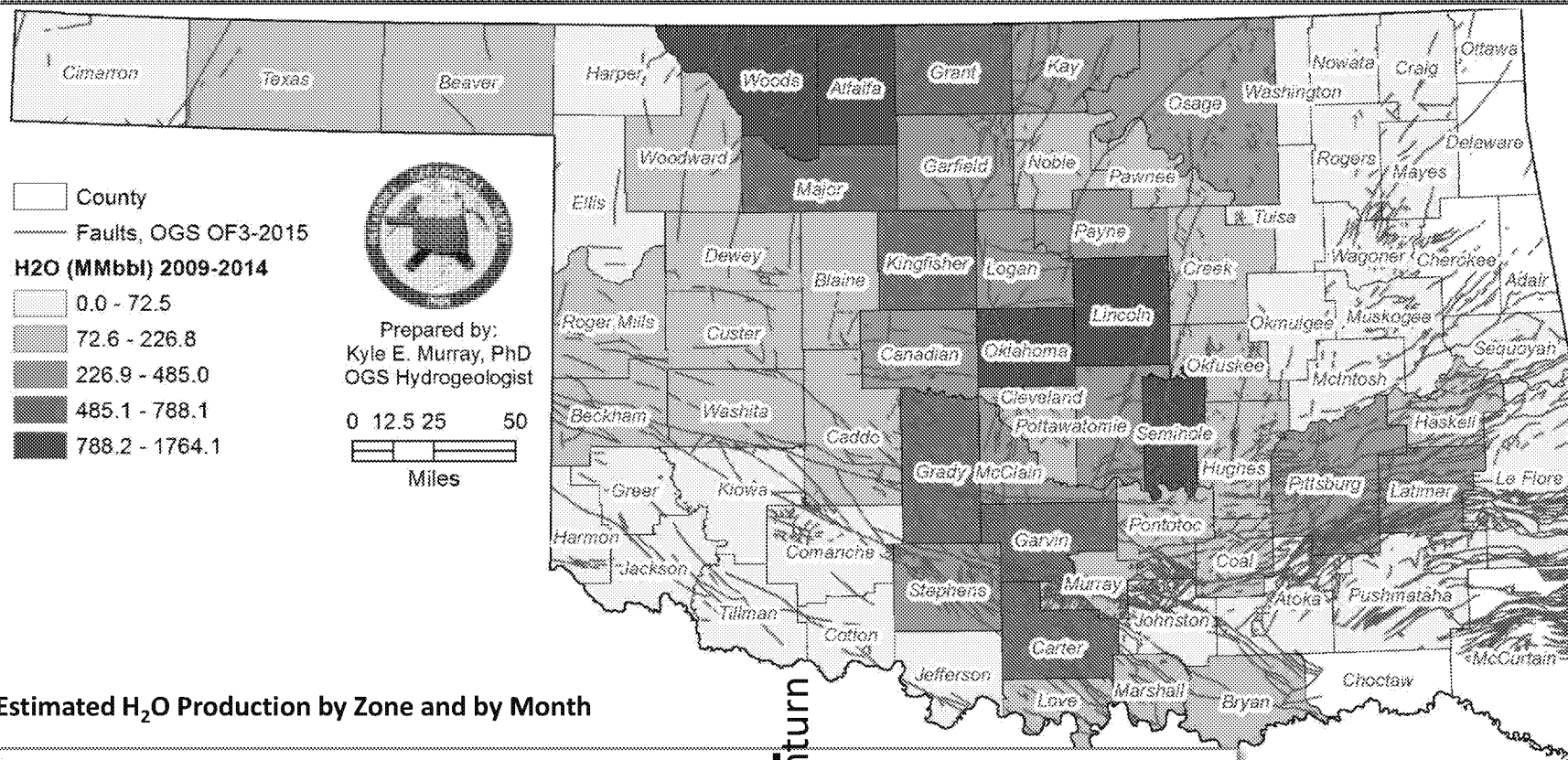
Basement, no data



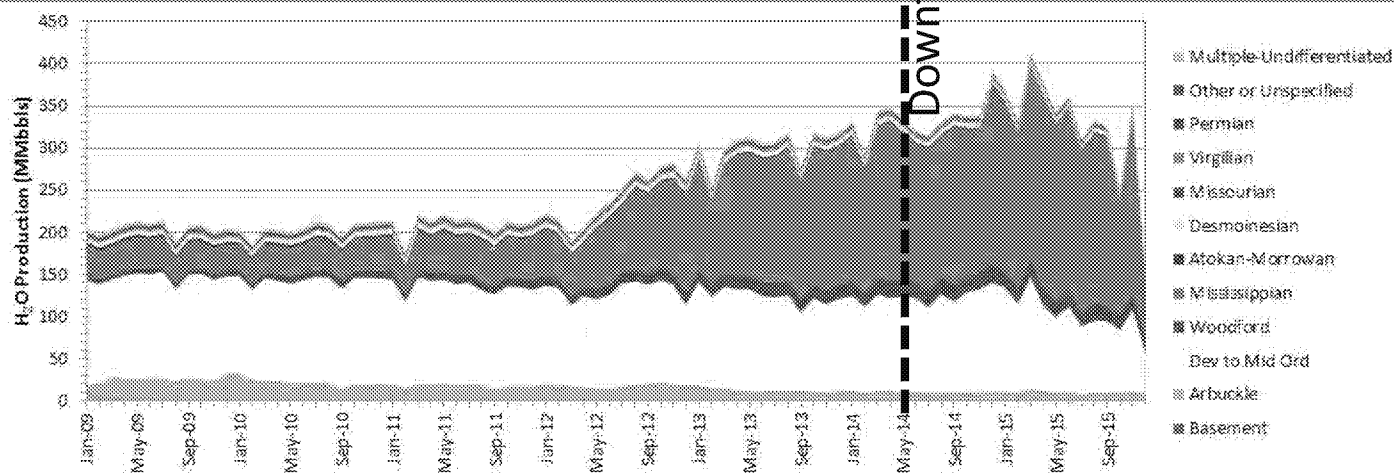
ratio of H₂O produced per vol gas produced from PT and IP tests, 2009–2014

- Assume produced H₂O from County X is disposed into County X
- Compare produced H₂O vs. SWD
- Adjust H₂O:oil and H₂O:gas by zone to maximize r² value of produced H₂O vs SWD volume

Produced H₂O by County 2009–2014, and by Zone 2009–2015



Estimated H₂O Production by Zone and by Month



<http://eerscmap.usgs.gov/pwapp/>

U.S. Geological Survey National Produced Waters

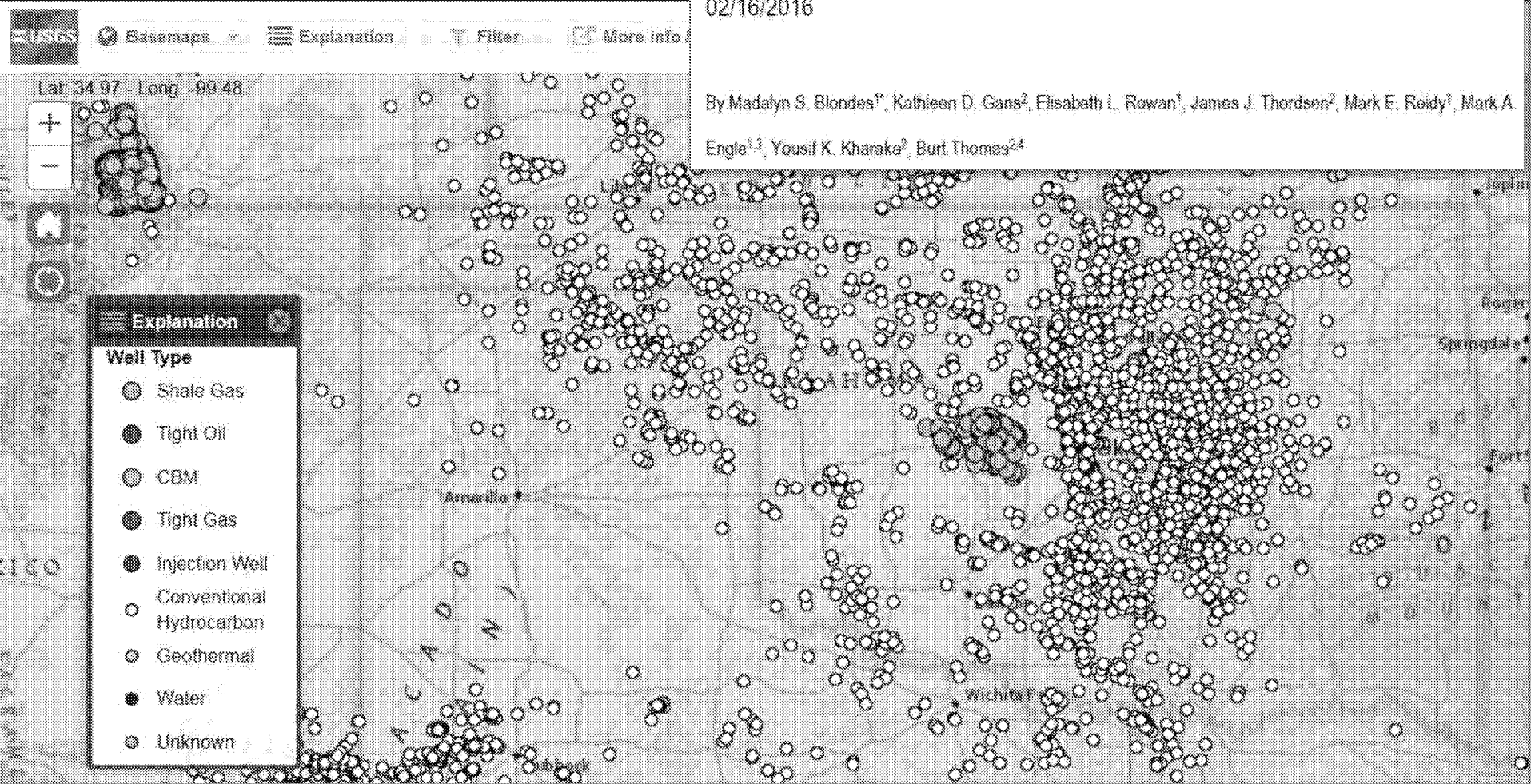
Geochemical Database v2.2 (PROVISIONAL)

Documentation

02/16/2016

By Madalyn S. Blondes^{1*}, Kathleen D. Gans², Elisabeth L. Rowan¹, James J. Thordsen², Mark E. Roidy¹, Mark A. Engle^{1,3}, Yousif K. Kharaka², Burt Thomas^{2,4}

Map of Produced Water Sample Locations

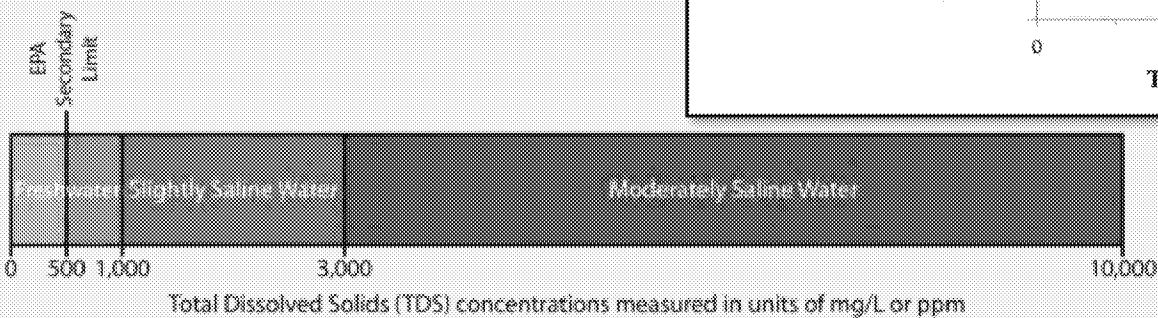
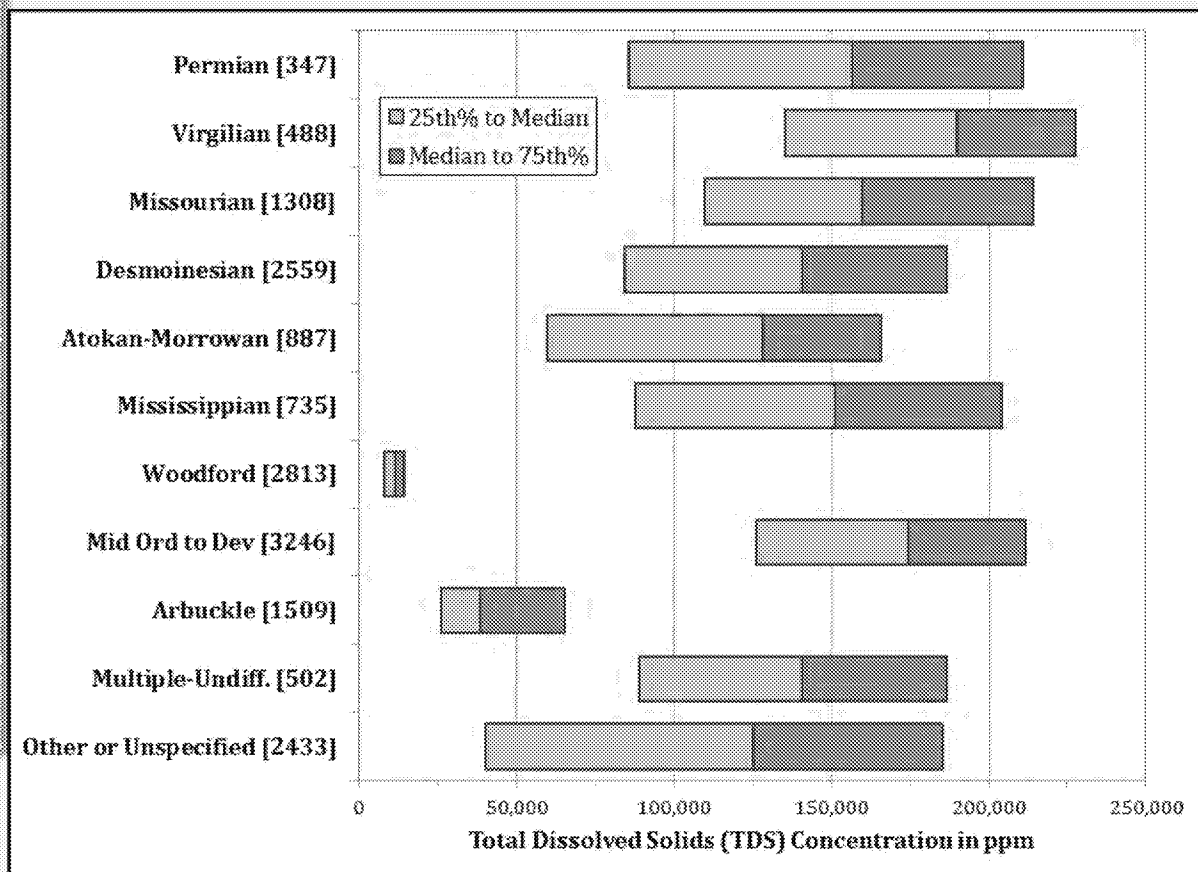


TDS Concentrations in H₂O Produced from Oil & Gas Wells

numWells	COUNTY	meanTDS	meanFe	meanCl
985	OSAGE	131478	59	80772
822	SEMINOLE	147630	34	90864
538	CREEK	139251	76	85743
507	OKLAHOMA	211358	161	129614
461	KAY	217863	145	134411
377	POTTAWATOMIE	154386	47	94441
319	STEPHENS	121926	57	74978
300	LINCOLN	181306	36	111673
297	BEAVER	95535	43	58522
265	GARVIN	164799	145	101382
255	NOBLE	229277	82	141757
251	LOGAN	213835	129	131787
232	CARTER	119608	24	73887
212	PONTOTOC	77727	37	47273
205	GARFIELD	228332	79	141576
200	OKFUSKEE	147245	107	90742
189	HARPER	193125	19	118811
171	BECKHAM	35597	110	20908
169	CADDO	128381	32	78786
155	HUGHES	142650	15	87675
152	MCCLAIN	220134	76	134795
150	KINGFISHER	143350	149	88221
148	PAWNEE	160483	38	98337
136	GRANT	231095	130	142478
133	PAYNE	190767	81	118758
131	CLEVELAND	198612	79	121555
111	GRADY	151809	119	93382

Data for:

pH, TDS, TSS, Ag, Al, As, Au, B, BO₃, Ba, Be, Bi, Br
 BrO₃, CO₂, CO₃, HCO₃, Ca, Cd, Ce, ClO₃, ClO₄, Cl, ClO₂, ClO
 Co, Cr, Cs, Cu, F, FeTot, FeIII, FeII, FeS, FeAl, FeAl₂O₃, Ga...



(Murray, 2016 – in preparation)

Comparison of Desalination Technologies

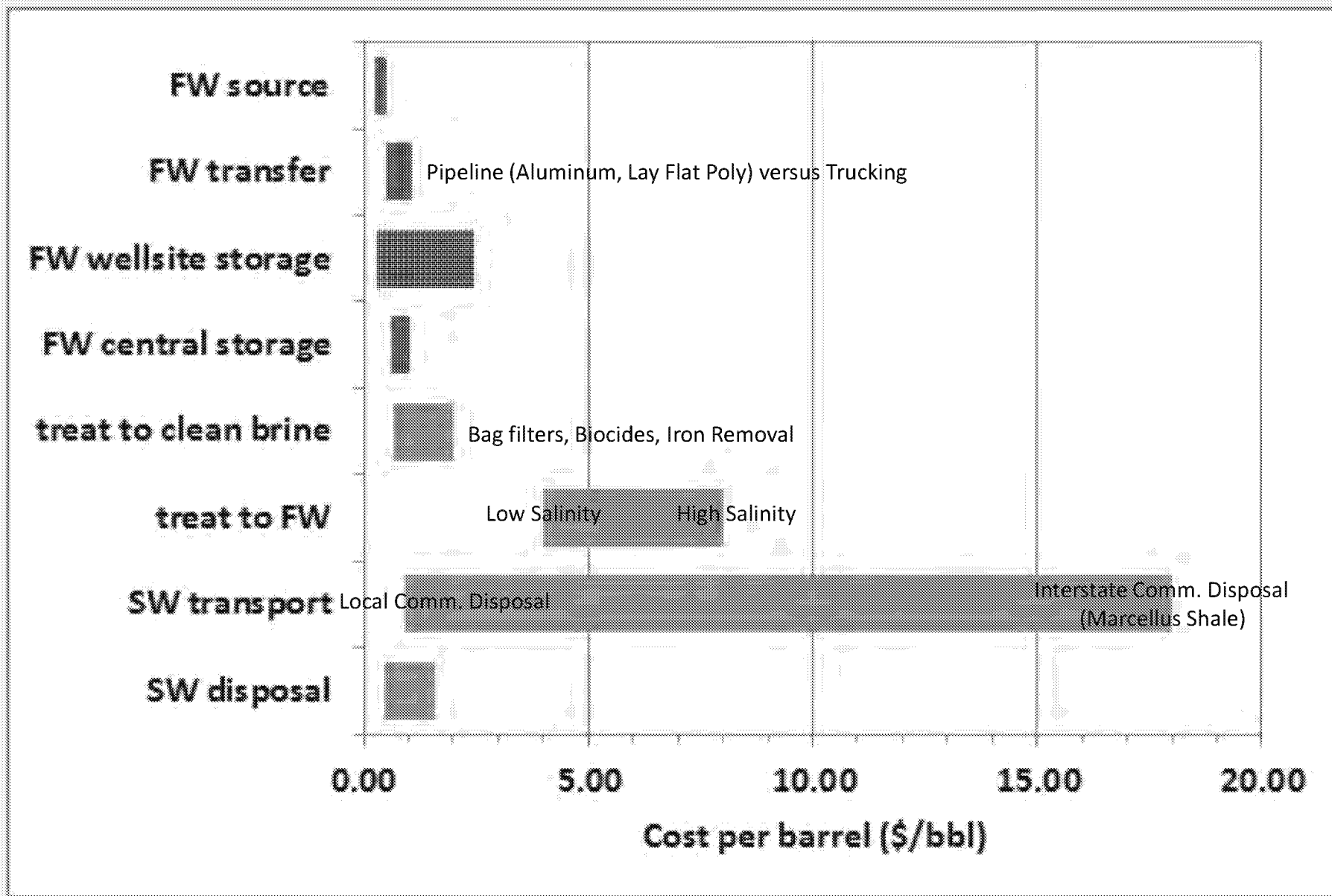
Technology	Feed Quality TDS (mg/L)	Process Recovery (%)	Energy Consumption (kWh/m ³)	Energy Cost (\$/bbl)*	Product Quality TDS (mg/L)
Reverse Osmosis (RO)	< 45,000 ^{b,e}	40–65 ^b	4–6 ^d	0.04–0.06	< 250 ^f
Membrane Distillation (MD)	> 50,000 ⁱ	65–95 ^g	20.5–66.7 ^j	0.19–0.63	< 50 ⁱ
Multi-Effect Distillation (MED)	< 100,000 ^e	20–35 ^b	14–21 ^d	0.13–0.20	< 10 ^d
Multi-Stage Flash (MSF)	< 100,000 ^b	10–20 ^b	19–27 ^d	0.18–0.25	< 10 ^d
Mechanical Vapor Compression (MVC)	< 200,000 ^c	40 ^{a,b}	10.4–13.6 ^a	0.10–0.13	< 10 ^b

*Estimate based on industrial electricity cost:
5.92 cents/kWh¹⁰

References

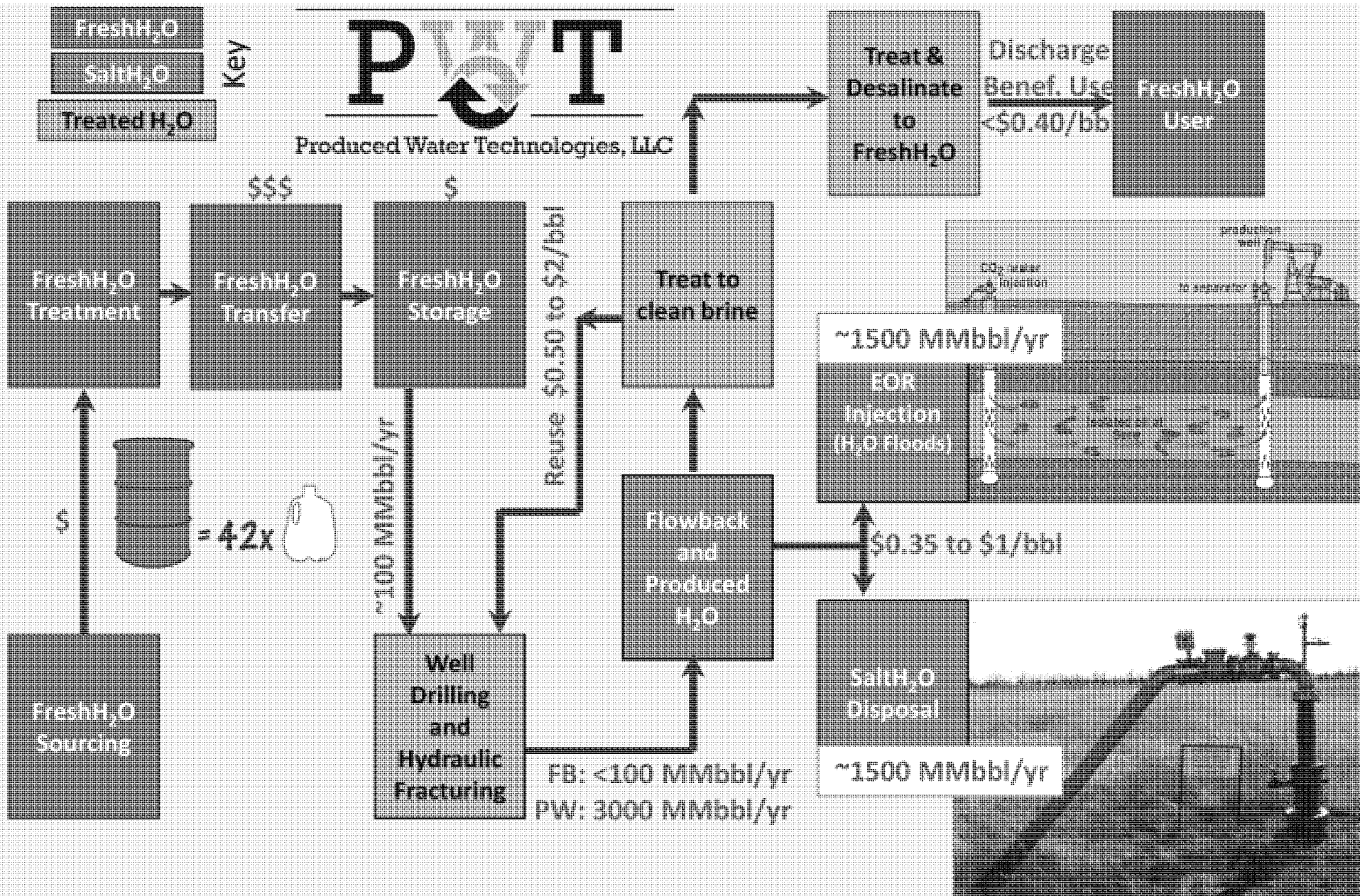
- a. Koren 1994
- b. Watson et al. 2003
- c. Shaffer et al. 2013
- d. Al-Karaghoul et al. 2012
- e. Fritzmann et al. 2007
- f. Tonner 2008
- g. Camacho et al. 2013
- h. Colorado School of Mines 2009
- i. U.S. Energy Information Administration 2014
- j. Tarnacki et al. 2012

Water Sourcing, Transfer, Treatment, and Disposal Costs in O&G



(from Kyle Murray presented on Sep 28, 2015 at Ground Water Protection Council meeting, Oklahoma City, OK)

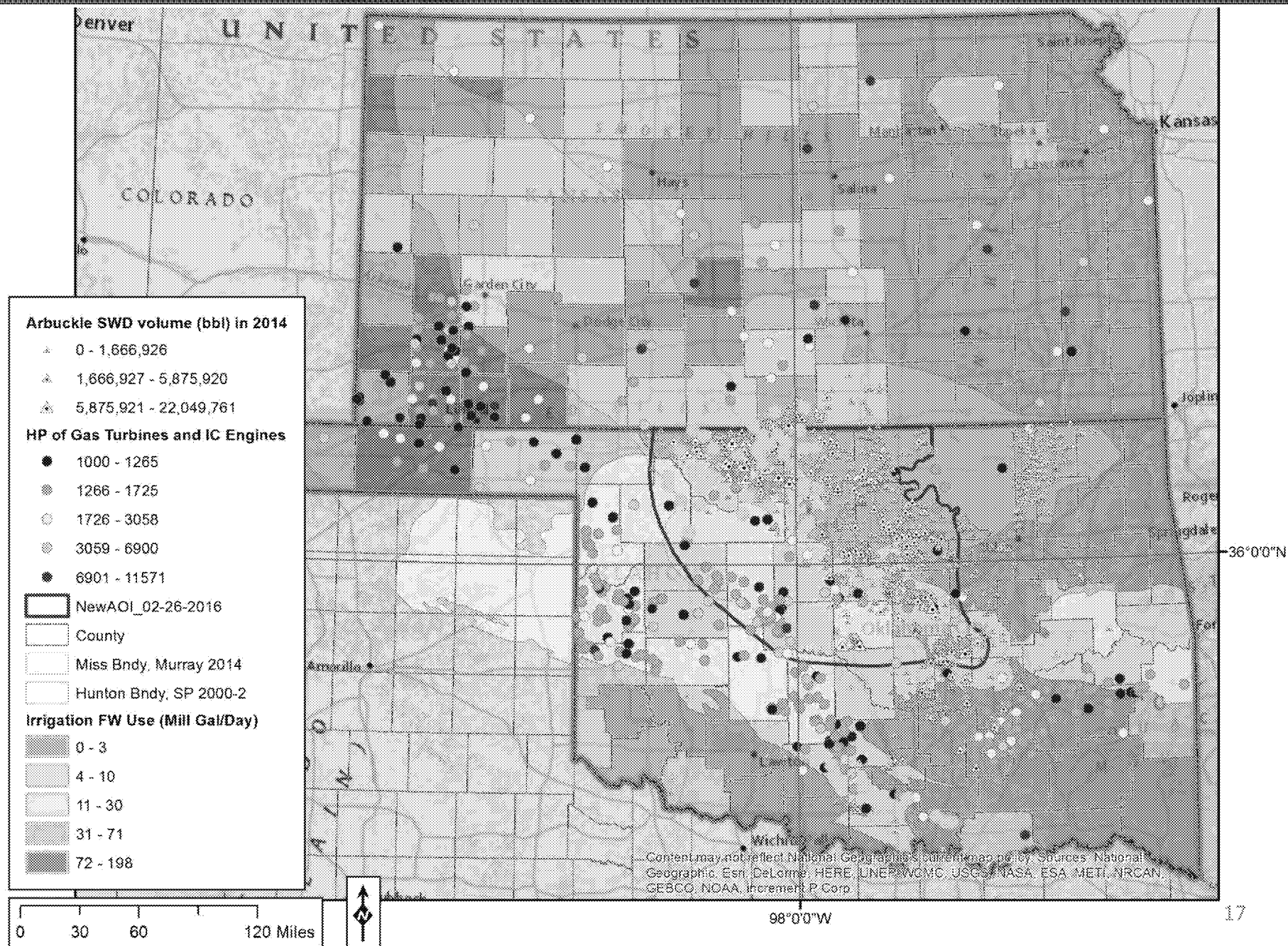
Water Sourcing, Transfer, Treatment, Reuse, & Disposal Flowchart



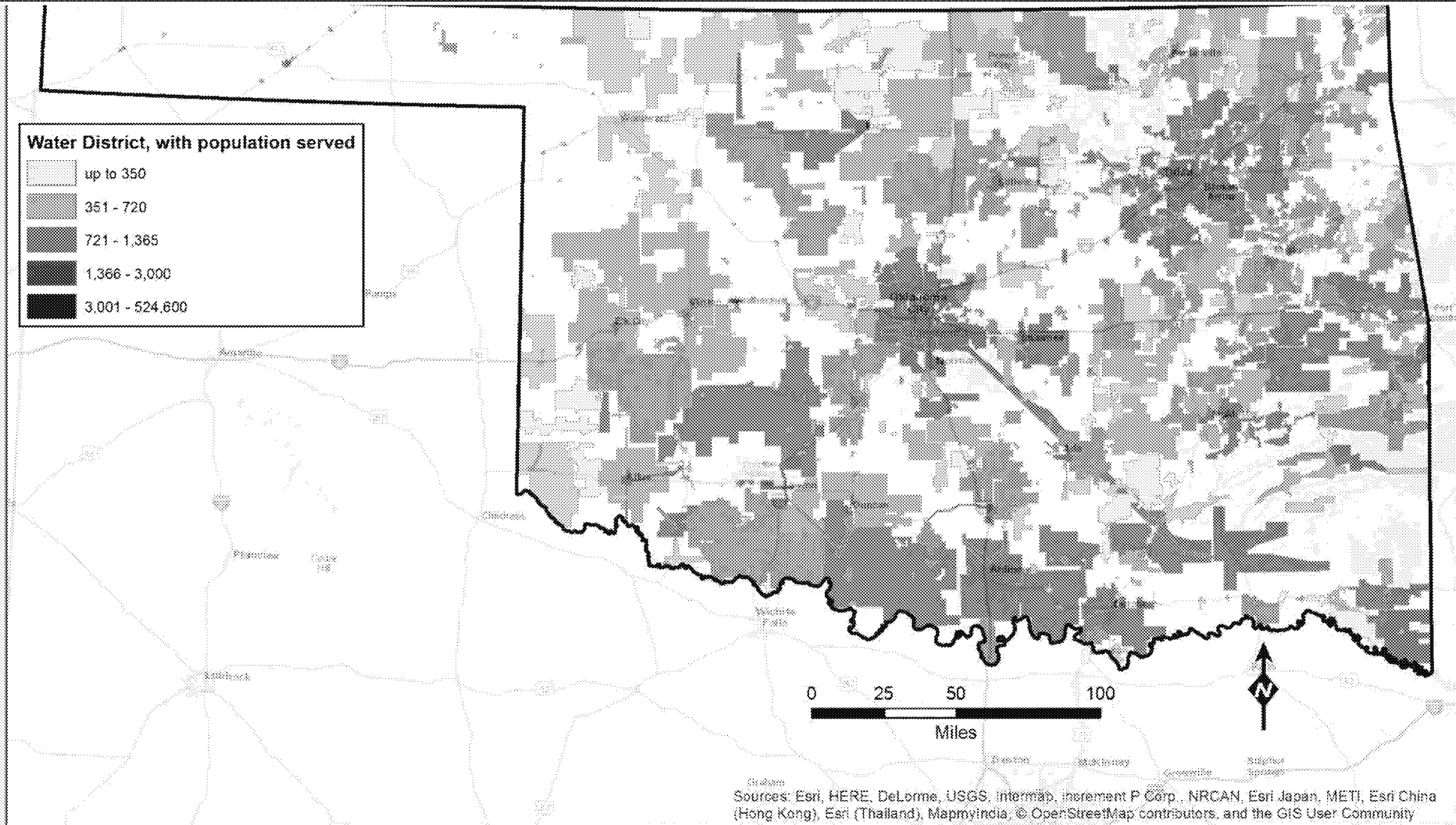
Multiple Stakeholders Must Cooperate/Collaborate

- **SWD Operators (aka Oil, Gas, H₂O Producers)**
- **Mid-Stream Companies**
- **End Users of Treated/Distilled H₂O (aka Irrigated Agric., Water Districts, or Water Flood Operators)**
- **Produced H₂O Transfer Company (aka Service Companies)**

Targa Compressors and Engines, freshwater Irrigation by County



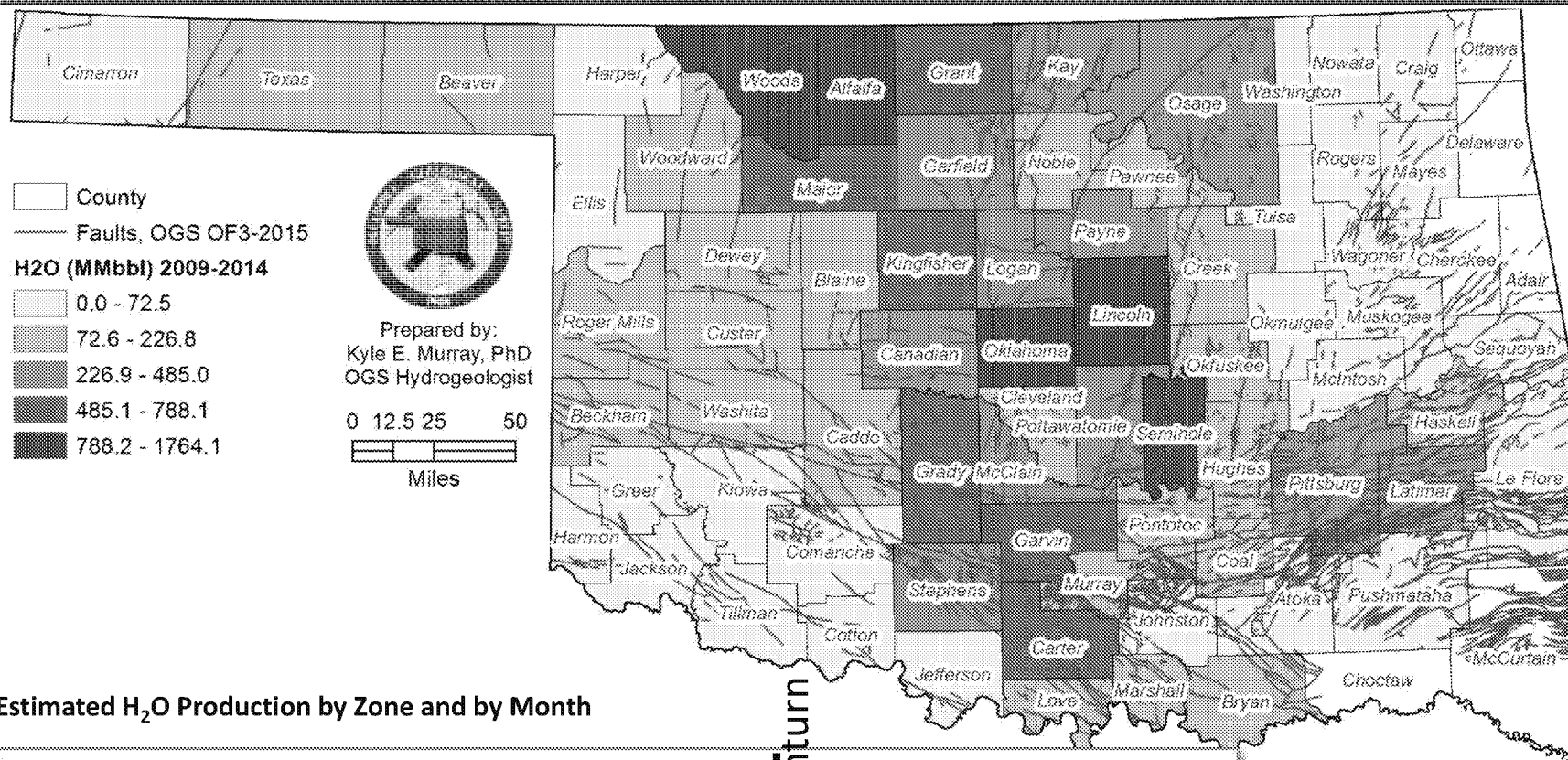
Oklahoma Water Districts



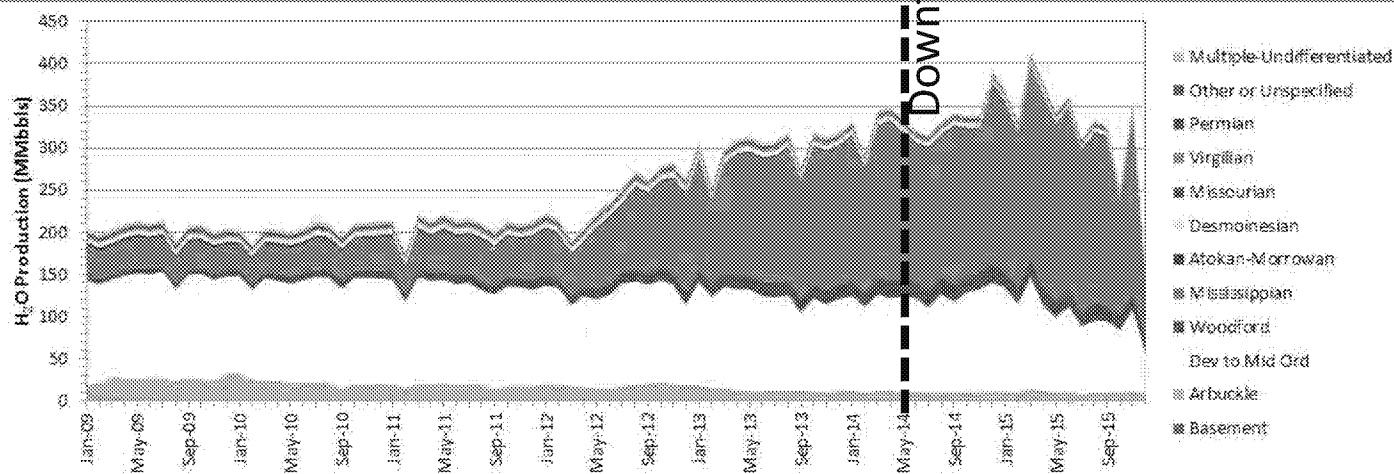
Countless Stakeholders Will Benefit

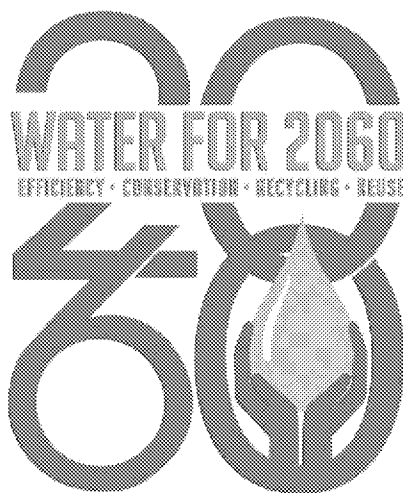
- **SWD Operators (aka Oil, Gas, H₂O Producers)**
- **Mid-Stream Companies**
- **End Users of Treated/Distilled H₂O**
- **Produced H₂O Transfer Company (aka Service Companies)**
- **Drought-Prone Regions of Oklahoma**
- **Private Citizens & Public Health**
- **Oklahoma Economy**

Produced H₂O by County 2009–2014, and by Zone 2009–2015



Estimated H₂O Production by Zone and by Month





Water for 2060 Produced Water Working Group

March 3, 2016

2:00 p.m.

**Oklahoma Water Resources Board
3800 N. Classen Boulevard, Oklahoma City, OK**

- 1. Welcome and Introduction of Workgroup Members** **J.D. Strong, Chairman**
 - a. Responsibilities of the Workgroup
 - b. Goals and Overall Timeline
 - c. Overview of Path to Achieving Goals
- 2. Energy Water Initiative Report: Recycling Flowback and Produced Water** **Michael Dunkel, CH2M**
 - a. Defining the problem
- 3. Innovation Challenge at Cost and Scale** **Michael Ming, GE Global Research**
 - a. Structured approach to decision making
- 4. Next Steps** **J.D. Strong**
 - a. Content Timing, Location of Future Workgroup Meetings
- 5. Adjourn**

MEETING NOTES

WATER FOR 2060 PRODUCED WATER WORKING GROUP

Meeting #1 March 3, 2016

2:00 p.m.

Oklahoma Water Resources Board

3800 N. Classen Boulevard, Oklahoma City, OK 73118

J.D. Strong, Executive Director of the Oklahoma Water Resources Board, and Chairman of the Water for 2060 Produced Water Working Group (PWWG), welcomed the members and attendees to the first meeting of the Group. He stated Governor Fallin had announced establishment of the PWWG on December 1, 2015, and charged the Group with discussing opportunities and challenges associated with treating produced water for beneficial uses to save fresh water by reusing and recycling oil and gas produced water, particularly alternatives to deep well disposal.

Chairman Strong set the stage for the Group's work saying members will meet to solve problems in a relaxed atmosphere, there is no schedule to meet, nor reporting requirements. He distributed copies of the "Water for 2060" brochure and noted the Water for 2060 Advisory Council's "Energy and Industry Recommendation 3: Promote Industrial Use of Marginal Quality Water" with the goal of increasing the use of marginal quality water supplies in industrial application. There is no legislative action required, and costs are associated with state agency staff time. The effort of the PWWG is a step toward implementing this recommendation, and with the current decline in the industry, the challenge will be to recommend reuse and recycling produced water while minimizing cost to the industry. The Group will be looking at gathering information and input on technological processes and barriers, as well state and federal regulatory structures for produced water.

Chairman Strong asked everyone to make self-introductions. Members of the PWWG in attendance were: Bud Ground, Environmental Federation of Oklahoma; Jeff Everett (for Usha Turner), OG&E Energy Corporation; Jesse Sandlin, Oklahoma Oil & Gas Association; Mike Mathis, Oklahoma Independent Petroleum Association; Michael Dunkel, CH2M; Mike Ming, GE Global Research; Mike Paque, Groundwater Protection Council; Fred Fischer, Oklahoma Panhandle Agriculture & Irrigation Association; Secretary of Agriculture Jim Reese; Tim Rhodes, Oklahoma Corporation Commission; Scott Thompson, Oklahoma Department of Environmental Quality; Brent Kisling, Enid Regional Development Alliance; Alan Riffel, Oklahoma Municipal League; Mark Matheson, Oklahoma Rural Water Association; Chad Penn, Oklahoma State University; and Terry Stowers, Coalition of Oklahoma Surface & Mineral Owners.

Mr. Michael Dunkel, CH2M, presented to the Group "Options to Produced Water Disposal" defining the problem of too much produced water, cutbacks to injections, and needing to explore economically viable alternatives. He provided conversions for consideration, and discussed in detail with members the current options for dealing with produced water and associated results: reuse for oil and gas as clean brine → transfer (transportation by truck and pipeline) and storage; reuse for other industry as brine; desalinate to "fresh water" → reuse for agriculture or other industry; discharge; and forced evaporation which creates a need to dispose of concentrated brine. Concluding his presentation, he talked about the information needed for moving forward, i.e., water quantity and quality, identifying industries that could use water, costs for permanent pipe volumes and distances, costs for trucking and transfer lines, and assessment of regulatory and legal issues, and what help the State and regulators can do.

Mr. Mike Ming, GE Global Research, presented to the Group “Innovated Challenge to Cost and Scale” which concerned finding ways to use the water, a comparison of water needs and produced water generation, noting not all use is needed in the same quality. He emphasized the problem needs to be assessed by breaking it down into manageable pieces. Fossil fuel and hydrocarbons still provide the largest amount of energy in the world; fresh water is drying up, energy is needed for desalination, shale gas in North America is in water constrained areas, coal-fired energy requires a lot of water to cool, so the needs for water is not decreasing and in Oklahoma drought is a major consideration. Water management technology strategies should be developed for the purpose of the water, and to meet short term needs while ensuring a long-term reliable water-energy supply. Factors to consider are risk, cost, energy, food, water, with outcomes being actionable. The response to market challenges is to develop the roadmap for moving forward by considering technology and design, extending digital industrial capabilities, and creating appropriate business models. Technology management is key to determining what will be done and what won’t through feasibility, viability and desirability, and developing policy for innovative management to create new markets for production while meeting the Water for 2060 goals.

Following the presentations, the members discussed options in technology, current processes and uses, the value of aquifer storage recovery, and what information would be useful in developing a strategy forward. Summarizing, Mr. Strong said the OWRB will provide a webpage for the PWWG under its current “Water for 2060” page and include the presentations from today’s meeting, as well as other pertinent presentations from GWPC’s recent UIC conference in Denver, and the Energy Water Initiative by CH2M:

- U.S. Onshore Unconventional Exploration and Production Water Management Case Studies
(Prepared for the Energy Water Initiative)
 - Produced Water Reuse and Recycling: Role in Long-term Water Sustainability
 - Agricultural Reuse of Treated Produced Water
 - Water Associated with Oil & Gas Development and Long Term Water Sustainability Strategies.
(Environmental Defense Fund)

Information/tasks the group will be gathering for future presentations include:

- Survey of what other states are doing
- Assess volume and quality of what water is being produced (invite Kyle Murray at the Oklahoma Geological Survey to make a presentation at the next meeting)
- Inventory potential users/uses of produced water; DEQ’s GIS-based tool showing available quantities of municipal waste water as a model
 - What is the current cost to oil and gas industry for produced water disposal.
 - Landowner/ownership and liability issues (in regard to aquifer storage and recovery)
 - Assessment of state and national situation, current regulatory framework and what is needed to bring the companies together (barriers).

Chairman Strong concluded the meeting stating he anticipated the group would meet in about two months, and he thanked everyone for their participation and attention.

OWRB Produced Water Group - Options to Produced Water Disposal

March 3, 2016



Defining the Problem

- Too much produced water compared to underground injection capacity (disposal)
- Oil and Gas - economic pressure from low prices
- Cutbacks to produced water injection may impact companies, jobs and the state's revenue
- What are the economically viable alternatives?

Conversions for Consideration

Various water group sectors use different water quantity metrics:

1 barrel of water (BW) = 42 Gallons

1,000 BW = 42,000 Gallons

10,000 BWPD = 0.42 Million Gallons per Day (MGD)

10,000 BWPD = 40.1 Cubic Feet per Second (CFS)

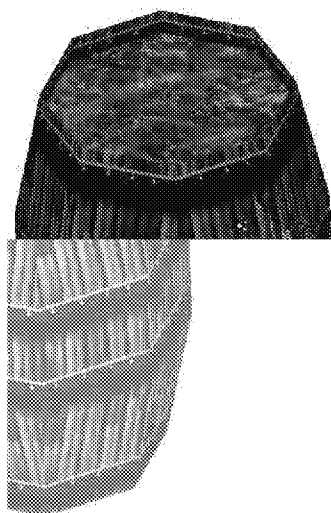
10,0000 BW = 1.29 Acre-Feet (AF)

1,000 Gallons = 23.8 BW

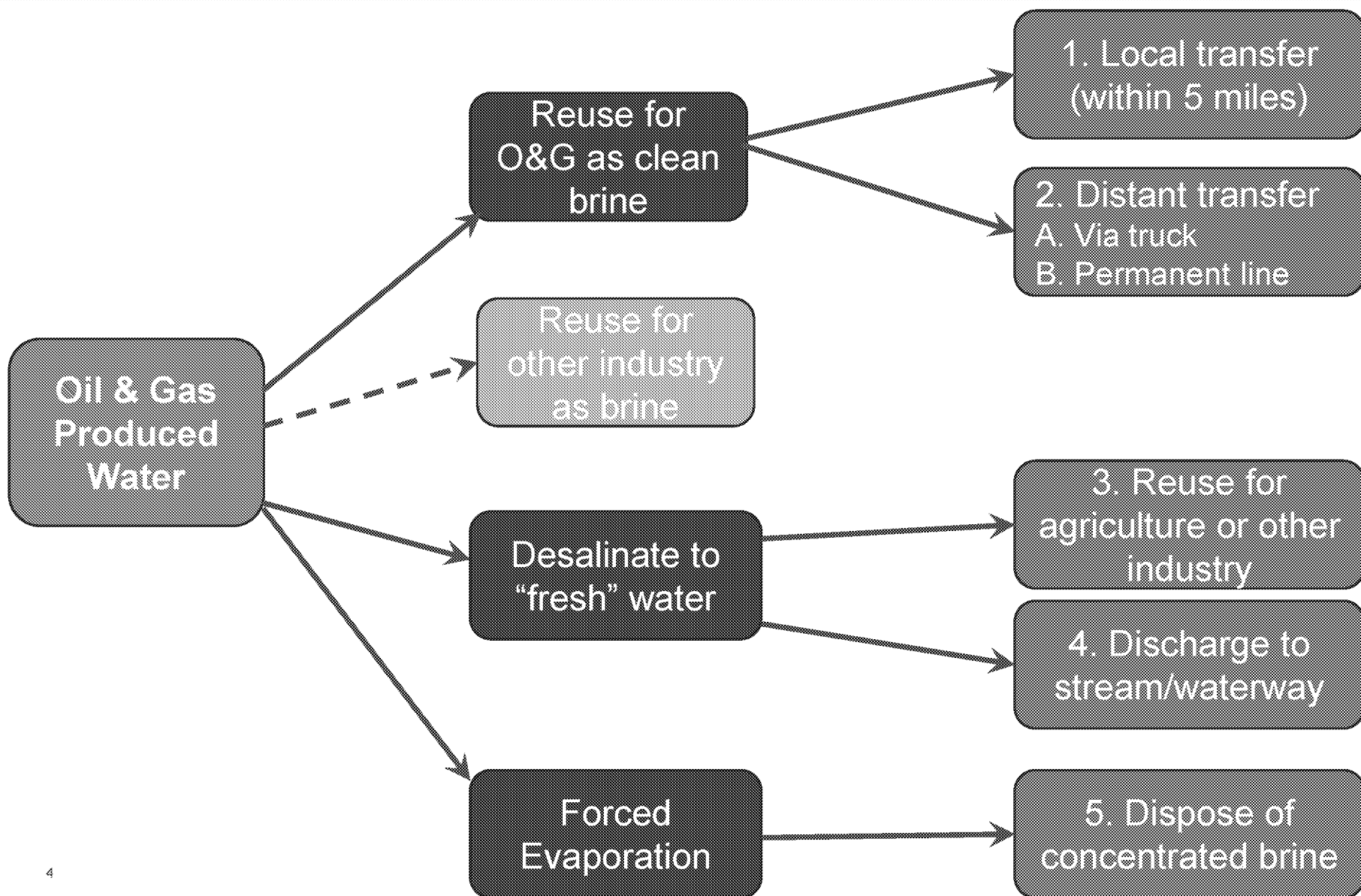
1,000 Gallons per day = 1,858 CFS

100,0000 gallons = 0.309 AF

1 Ton of water = 1 Ton of cotton



Options Overview



1. O&G Reuse within 5 miles

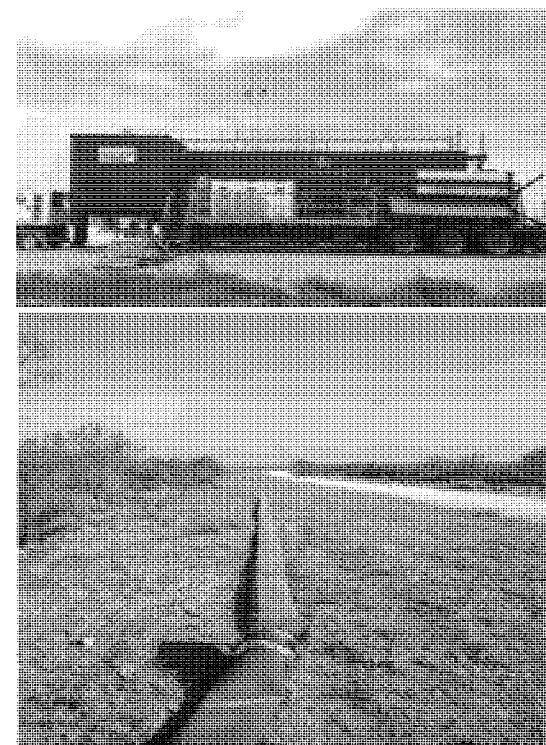
Process

- Treat water for-purpose (clean brine)
- Transfer water via temporary line on surface
- Store water at well site
- Total cost: \$2 to \$4/BW*

Viability

- Limited to rig activity within about 5 miles
- This is already being done where possible

*Disclaimer: All costs are conceptual and for internal comparison only. More detailed analyses needed.



2A. O&G re-use - Distant Transfer via Truck

Process

- Treat water for-purpose (clean brine)
- Transfer water via truck
- Store water at well site
- Total cost: \$4 to \$10/BW

Viability

- Costly due to treatment and trucking
- More trucks on roads create other problems



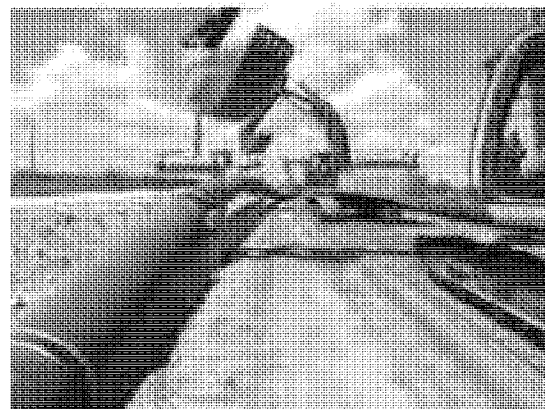
2B. O&G Re-use Distant Transfer via Permanent Line

Process

- Treat water for-purpose (clean brine)
- Transfer water via buried line
- Store water at well site
- Total cost: \$2 to \$6/BW

Viability

- Large volumes needed to make permanent lines pay out
- Multi-company network could improve economics with larger volumes



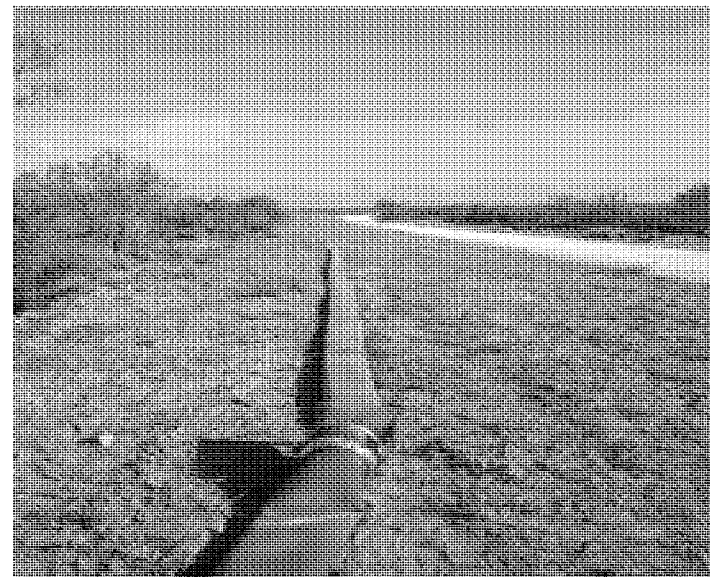
3. Desalinate – Use for Ag or Other Industries

Process

- Desalinate to “fresh” water standard
- Transfer water via temporary or permanent line
- Total cost: \$4 to \$10/BW

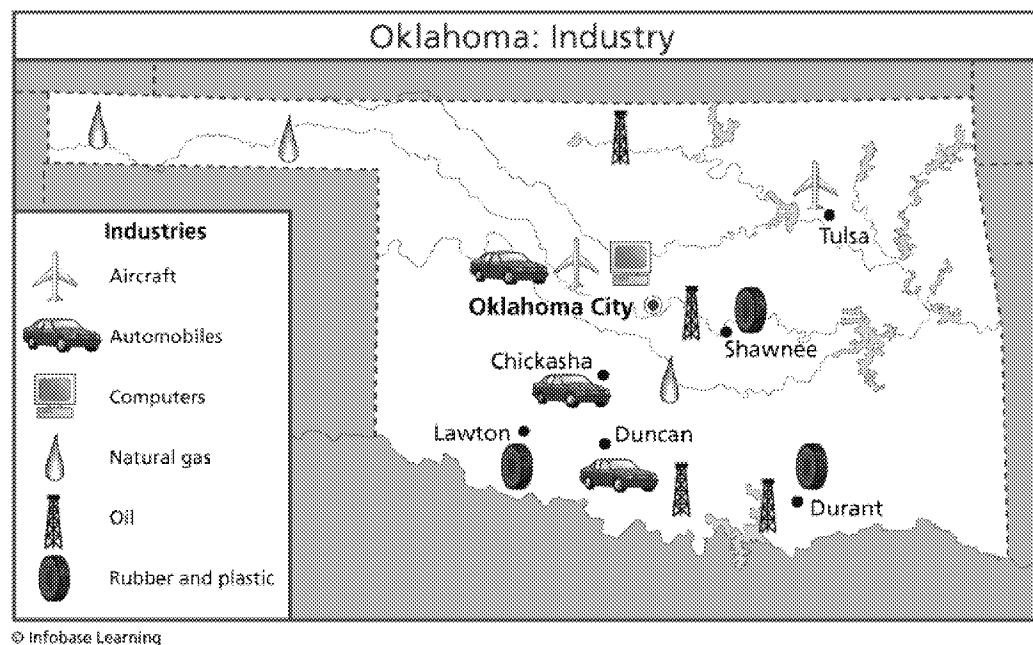
Viability

- Plant cost is high, or per barrel treatment high
- Generates solid waste removed from brine
- Regulatory issues?
- Commercial complexity



Top Industries in Oklahoma*

1. Energy – 20% Oil & Gas; Wind energy
 - A. Refinery at Ponca City
2. Information & Finance – 70+ Data Centers, Software
3. Transportation & Distribution – Railroads, airports...
4. Agriculture & Bioscience – Food manufacturing, R&D, fertilizer manufacturing
 - A. Koch fertilizer plant in Enid
5. Aerospace & Defense –
 - A. Tinker Air Base (OKC),
 - B. American Air in Tulsa
 - C. Vance Air Base near Enid
6. Other –
 - A. OSU in Stillwater



4. Desalinate and Discharge to Waterway

Process

- Desalinate to “fresh” water standard
- Discharge to waterway (NPDES permit)
- Total cost: \$4 to \$8/BW

Viability

- Plant cost is high, or per barrel treatment high
- Generates solid waste removed from brine
- Removes transport to user, but also removes value due to no water buyer

5. Forced Evaporation & Concentrated Brine Disposal

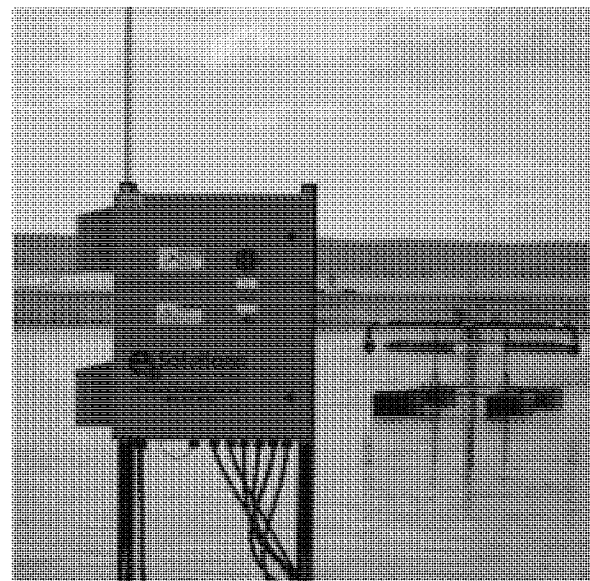
Process

- Forced evaporation reduces volume
- Significant storage area needed
- Concentrated brine still must be disposed
- Total cost: \$3 to \$6/BW

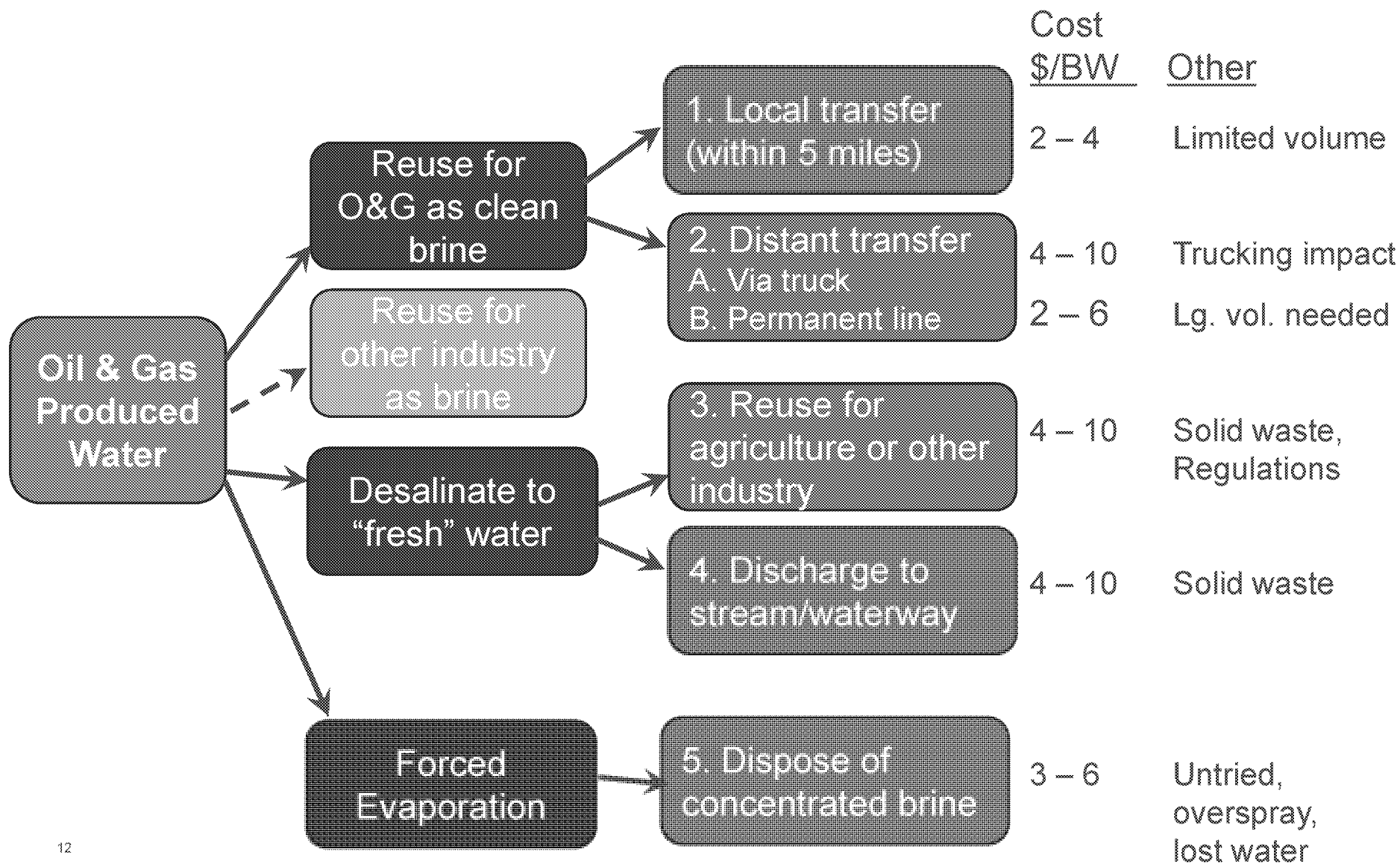


Viability

- Has not been performed on large scale
- Overspray of produced water is hazard
- No value generated from evaporated water

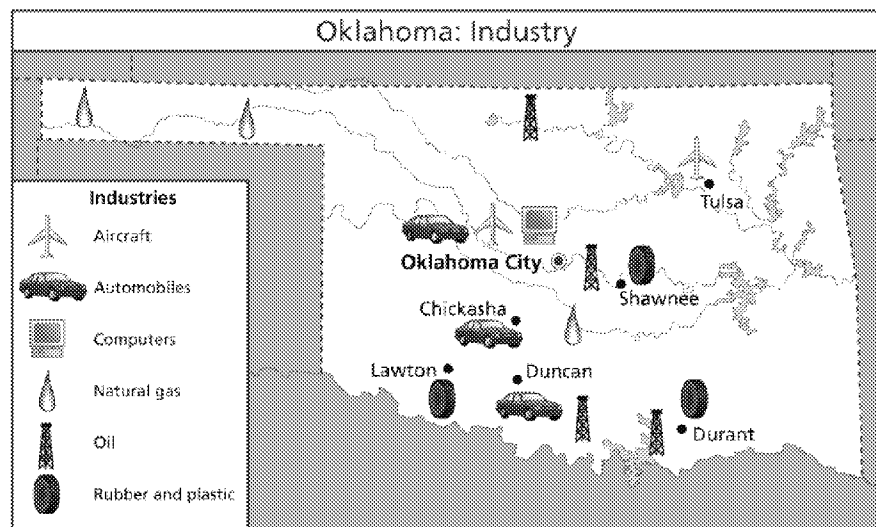


Options Overview



Information Needed for Assessment

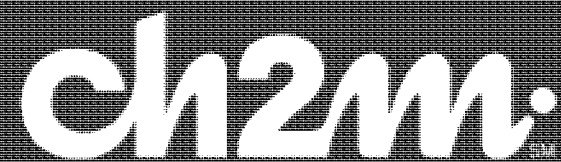
1. Water quantity & quality available from O&G
2. Industries in north central OK that could use water
 - A. Quantity and quality needed
3. Costs for permanent pipe volumes and distances
4. Costs for trucking and temporary lines
5. Assessment of regulatory and legal issues



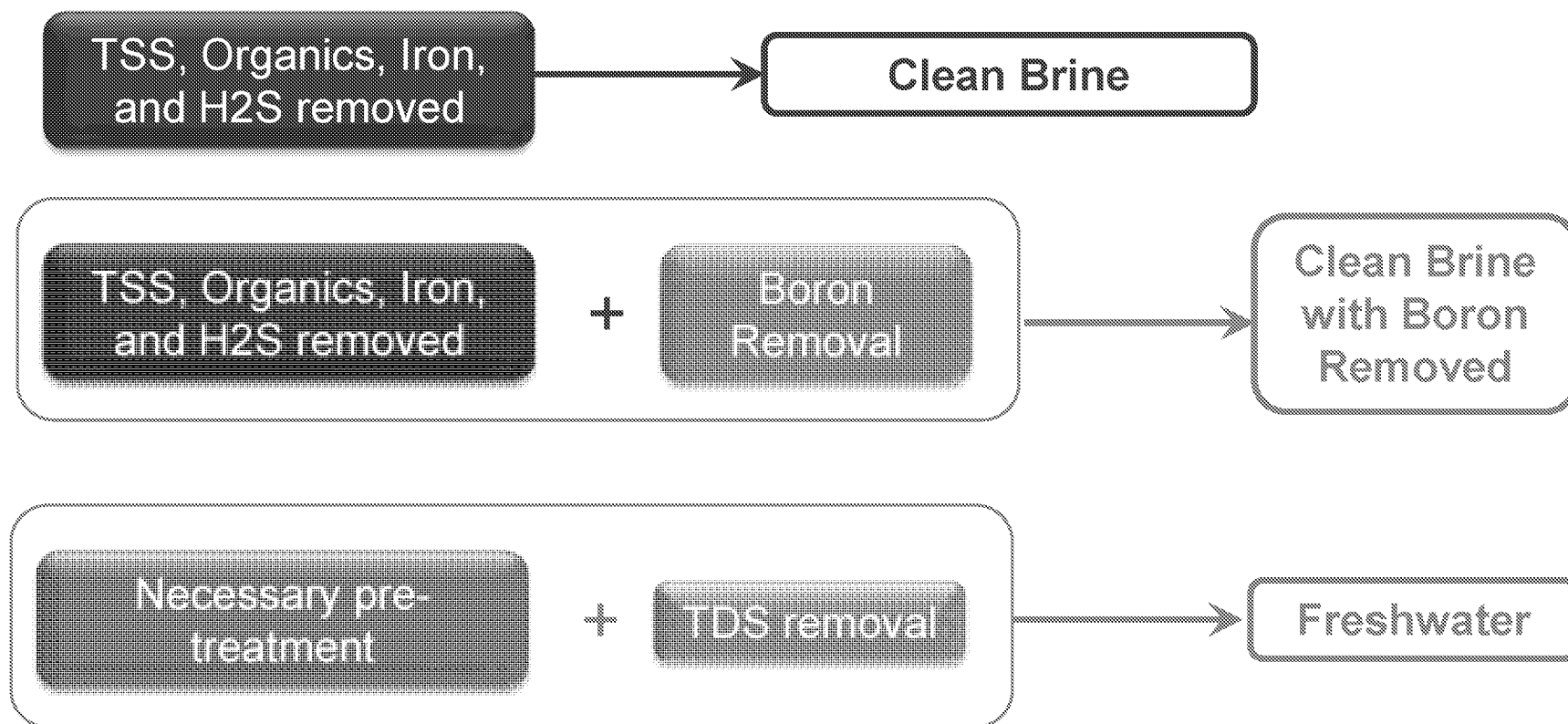
How can the State help?

1. Help gather basic data
2. Assessment of state and national oil & gas water management
3. Bring companies together for opportunities
4. Regulatory framework

Thank You



Types of produced water treatment





Innovation Challenges at Cost & Scale

GE Oil & Gas Technology Center
March 3, 2016

Imagination at work.

Innovation Challenges at Cost and Scale



Water for 2060 Initiative

Comparison of water needs & produced water generation

By Sector

- Oil & gas
- Thermo-electric
- Agriculture
- Manufacturing
- Municipalities

By Region

- Infrastructure
- Logistics
- Energy mix
- Waste mgt.
- Regulatory/legal



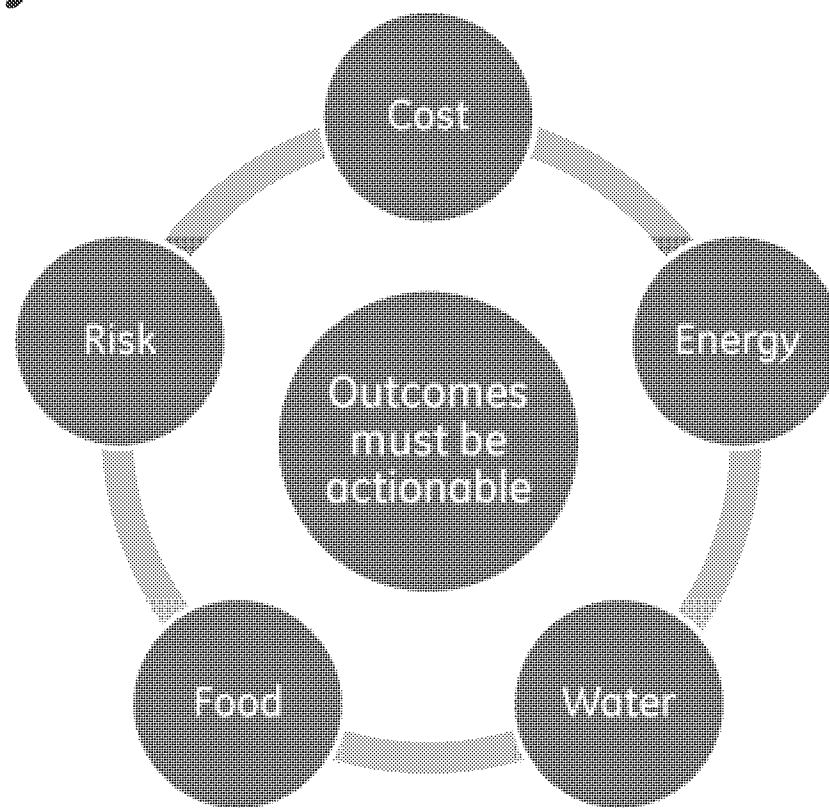
Fit-for-Purpose Strategy

Water management technologies and strategies¹

Tier 1: Minimize the volume of produced water volumes brought to surface

Tier 2: Reuse and repurpose produced water

Tier 3: Reduce disposal to Class II SWD wells



Water
Conservation

Energy Consumption
Reduction & Efficiency

Industrial-Scale
Solutions

Statewide Resource
Transformation

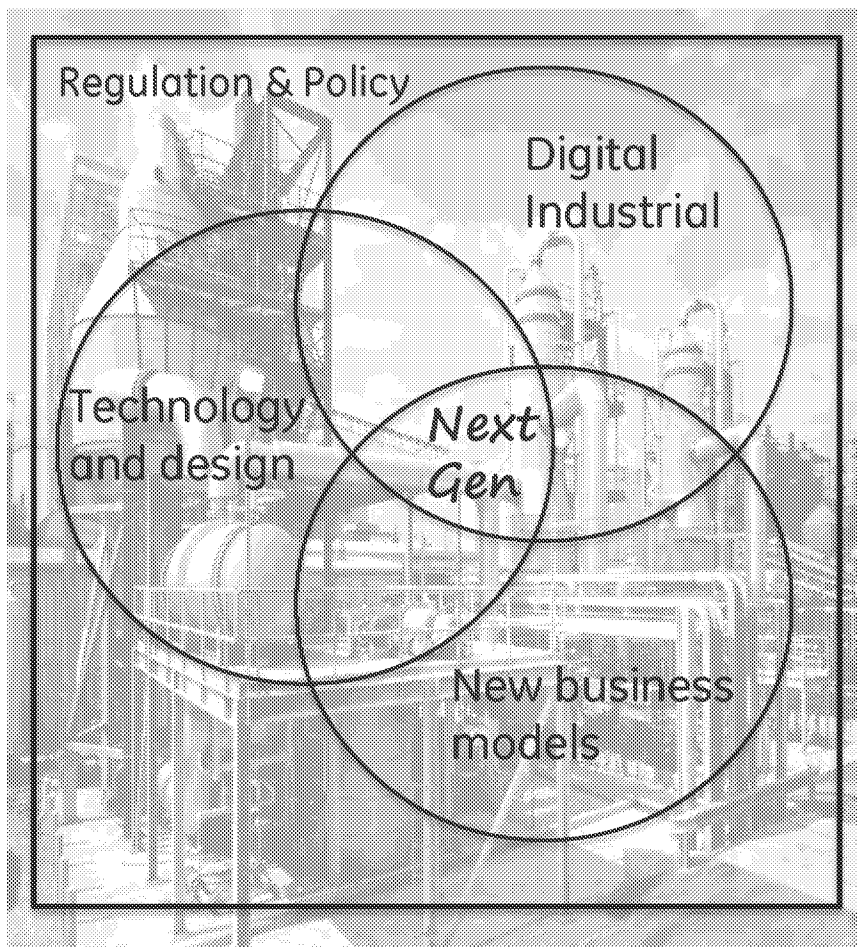
Meet short-term needs and ensure long-term reliable water-energy supply



1: U.S. Produced water volume and management practices in 2012 (Veil, 2015)

GE Response to Market Challenges

Innovation pillars



Roadmap & path forward

Technology & Design

- Modularization and structuring footprint and cost reduction
- Process optimization
- Advanced materials, robotics, additive manufacturing

Extending Digital Industrial

- Automation and robotics
- Remote/unmanned operations
- Process/production flexibility
- Prediction/optimization

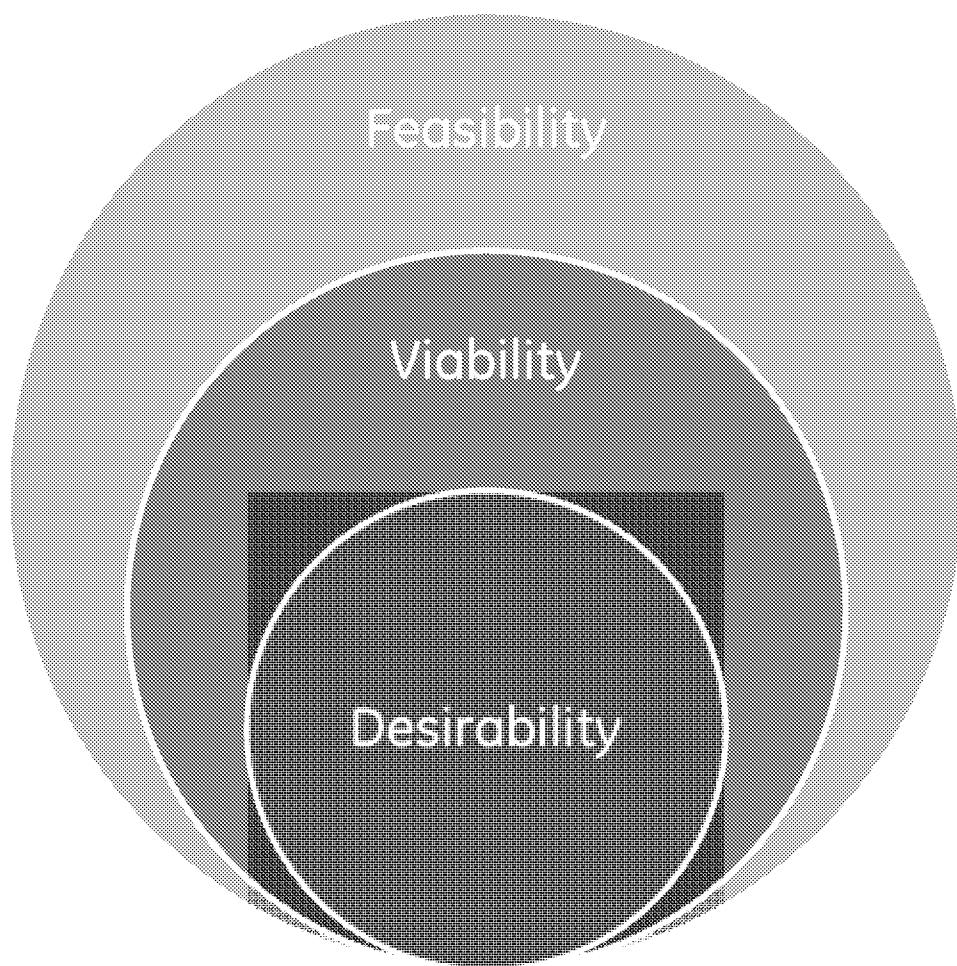
Business model (e.g.)

- BOO, leased equipment, service
- Pay for performance



Technology Management

Determining what we will and won't do and why



- Feasibility
 - Technical Reality
- Viability
 - Commercial Value
 - Willing Stakeholders
 - Commercial Plan
- Desirability
 - Enabling the Digital Age
 - Optimizing Industry Operations
 - Transforming the Industry
 - Maintaining Industry's Social License to Operate
 - Enhancing the Value of Oil & Gas in the Energy System
 - Creating New Markets for Production

Fall in love with the *Problem*, not the solution....

There's a way
to do it better—

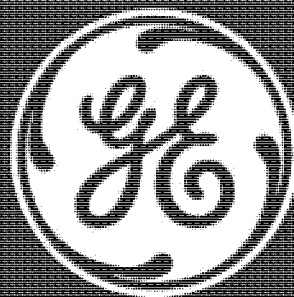


—Thomas Edison

MISSION

Use no more fresh water in
2060 than was used in 2012,
while supporting Oklahoma's
continued growth and
prosperity.





Appendix B
Produced Water Data and Estimate
Detail

Produced Water Injected Per County

Source: 2015 UIC Injection Volumes Report_Incomplete.xlsx

County	Total Barrels of Produced Water Injected (December 2015)	Produced Water Injected Barrels Per Day (December 2015)
ALFALFA	18617345.53	600,559.53
BEAVER	1223217	39,458.61
BECKHAM	692007	22,322.81
BLAINE	795986.16	25,676.97
BRYAN	0	-
CADDO	1118963	36,095.58
CANADIAN	2050557	66,147.00
CARTER	32276374	1,041,173.35
CIMARRON	135646	4,375.68
CLEVELAND	173508	5,597.03
COAL	685569	22,115.13
COMANCHE	30176	973.42
COTTON	541516	17,468.26
CRAIG	11724	378.19
CREEK	14735160.55	475,327.76
CUSTER	392947	12,675.71
DEWEY	3805616	122,761.81
ELLIS	916568	29,566.71
GARFIELD	4550592.5	146,793.31
GARVIN	5176001.24	166,967.78
GRADY	1696480.3	54,725.17
GRANT	3394572.91	109,502.35
GREER	525	16.94
HARMON	1085	35.00
HARPER	403695	13,022.42
HASKELL	449	14.48
HUGHES	2230739	71,959.32
JACKSON	145746	4,701.48
JEFFERSON	468253	15,104.94
KAY	5385286	173,718.90
KINGFISHER	2008227	64,781.52
KIOWA	12925	416.94
LATIMER	63716	2,055.35
LEFLORE	20678	667.03
LINCOLN	4645787	149,864.10
LOGAN	2039600.14	65,793.55
LOVE	342203	11,038.81
MAJOR	609271.5	19,653.92
MARSHALL	28651	924.23
MAYES	10297	332.16

Produced Water Injected Per County

Source: 2015 UIC Injection Volumes Report_Incomplete.xlsx

County	Total Barrels of Produced Water Injected (December 2015)	Produced Water Injected Barrels Per Day (December 2015)
MCCLAIN	422204.9	13,619.51
MCINTOSH	289679	9,344.48
MURRAY	1606092	51,809.42
MUSKOGEE	127333	4,107.52
NOBLE	5067459.66	163,466.44
NOWATA	2492686	80,409.23
OKFUSKEE	1279092	41,261.03
OKLAHOMA	5931000	191,322.58
OKMULGEE	880043.5	28,388.50
PAWNEE	2907390	93,786.77
PAYNE	5464415	176,271.45
PITTSBURG	467478	15,079.94
PONTOTOC	13312350	429,430.65
POTTAWATOMIE	4471924.5	144,255.63
ROGER MILLS	724954	23,385.61
ROGERS	92297	2,977.32
SEMINOLE	10201020.75	329,065.19
STEPHENS	14138536	456,081.81
TEXAS	4631488.65	149,402.86
TILLMAN	180512	5,822.97
TULSA	1212893.16	39,125.59
WAGONER	263990	8,515.81
WASHINGTON	1132098	36,519.29
WASHITA	229063	7,389.13
WOODS	10578922	341,255.55
WOODWARD	953843	30,769.13

Appendix C

Water Demand Data and Estimate Detail

Summary of Water Use by County versus Produced Water Injected
Source: PWWG_Permits_NonPot_Users - cleaned.xlsx

County	Water Use By County (BPD) ¹									Grand Total
	Produced Water Injected (December 2015 BPD)	Agriculture	Commercial	Industrial	Irrigation	Mining	Other	Power	Recreation, Fish, Wildlife	
ADAIR	0	14073	531		34626					49230
ALFALFA	600560	7223	14658	425	406159	42135			87563	558162
ATOKA	0	157	8336	255339	48243	49829		4758	44589	411251
BEAVER	39459	65959	3165	16276	5089068	35949			10118	5220536
BECKHAM	22323		18042	5234	1016900	35724			30127	1106026
BLAINE	25677	29139	1115	4482	501295	77579			7223	620833
BRYAN	0	12778		4735	693123	121745			146087	978467
CADDO	36096	12508	319	29194	4455239	20606		111376	55809	4685051
CANADIAN	66147	2677	616	6120	1220717	197346		251430	47032	1725938
CARTER	1041173		1487	3526	433921	41424			277283	757641
CHEROKEE	0	6267	1487	2018	106384				9177	125333
CHOCTAW	0	425	425	58858	271671	6373		651497	39299	1028547
CIMARRON	4376	47093	7201		6570796	3250			13595	6641936
CLEVELAND	5597	404	150134	1814	335862	13829	170		9411	511624
COAL	22115	765	42		44504	44610			21	89942
COMANCHE	973	2762		262674	236951	6808			49241	558436
COTTON	17468				43272				807	44079
CRAIG	378	114541								114541
CREEK	475328				39357	42			13538	52937
CUSTER	12676		1013	24627	2258400	77218			8773	2370032
DELAWARE	0	61951	5818	552	11068		425		21	79835
DEWEY	122762		166	4036	1298550	443253			5778	1751784
ELLIS	29567	14279	14275	13880	1286712	7987			39448	1376582
GARFIELD	146793	1976	3894	2443	203558	56430			10902	279201
GARVIN	166968		1043	201191	191526	73706			50622	518088
GRADY	54725	95742	514	15720	1258087	144090			29166	1543319
GRANT	109502			6437	342293	21158				369887
GREER	17		53		560913					560967
HARMON	35				1897720		42486		3548	1943753
HARPER	13022	2116		21	1525477				3718	1531332
HASKELL	14	29166			72874					102040
HUGHES	71959	50558			315747	1976			17823	386104
JACKSON	4701	382		23346	2967143	14700			1196	3006767
JEFFERSON	15105				81658	5098			3824	90580
JOHNSTON	0	23401	93	6224	164921	89781			70424	354845
KAY	173719		149	172632	424228	15911		1062		613982
KINGFISHER	64782			12125	1354094	228348			3633	1598200
KIOWA	417	23716	4079	382	390648	5353				424177
LATIMER	2055	2592	319		17886				10260	31057
LEFLORE	667	8191	59	6160	464692			427555	27318	933976
LINCOLN	149864		659	446	42613				43059	86777
LOGAN	65794	16463	10197	28997	132264	144451			14530	346902

Summary of Water Use by County versus Produced Water Injected

Source: PWWG_Permits_NonPot_Users - cleaned.xlsx

Water Use By County (BPD) ¹										
County	Produced Water Injected (December 2015 BPD)	Agriculture	Commercial	Industrial	Irrigation	Mining	Other	Power	Recreation, Fish, Wildlife	Grand Total
LOVE	11039		6883	616	555269	299482			16455	878704
MAJOR	19654			650	1391936	8816			33946	1435348
MARSHALL	924		38		157065	99098			2124	258326
MAYES	332	3696	64							3760
MCCLAIN	13620			42	213988				2146	216176
MCCURTAIN	0	722		813319	69910				17154	901105
MCINTOSH	9344	9963	2847	85	15667				6267	34828
MURRAY	51809	10621		6058	53107	6861		47032	149698	273379
MUSKOGEE	4108	637	25564	752741	435283			3203219	14233	4431676
NOBLE	163466				80595	1381		76474	8703	167154
NOWATA	80409				15698	4886			5842	26426
OKFUSKEE	41261	7084	6798	8285	67943	18864		10621	2018	121613
OKLAHOMA	191323	7138	60291	71913	415160	19161	6798	315371	100880	996713
OKMULGEE	28389				31758				28529	60287
OSAGE	0		276	49326	351506	8901		531071	2337	943417
OTTAWA	0	2294		4780	19238					26311
PAWNEE	93787		6352		21392	5948		1550729	3399	1587819
PAYNE	176271	127	10235	20860	141860	27297		27106	210814	438300
PITTSBURG	15080			19607	161934	1912		701864	8497	893814
PONTOTOC	429431	14424		22624	223301	16230		55231	3038	334847
POTTAWATOMIE	144256	2231	2163	6685	290904	2466			14519	318968
PUSHMATAHA	0				47183				5098	52281
ROGER MILLS	23386		0	7010	2798373	70471			46118	2921972
ROGERS	2977			361	144112	1593		436859	51733	634658
SEMINOLE	329065	2549	204	13391	36746	28404		745412	10664	837370
SEQUOYAH	0		595	35433	244414	5035			375021	660498
STEPHENS	456082		2791	888	86858	12909			56718	160165
TEXAS	149403	348430	15762	4108	16479548	28126			6522	16882495
TILLMAN	5823	10197			1177277	2549			319	1190341
TULSA	39126			33224	279535	1657		364583	871	679869
WAGONER	8516			1846	267709		15295	382053	13489	680392
WASHINGTON	36519				62242				17249	79491
WASHITA	7389	7647	1168	212	1104813	75540			13338	1202720
WOODS	341256	6798	13765	425	488352	39920				549260
WOODWARD	30769	7499	3718	15106	907907	3620		102051	467	1040367

Notes:

¹From Non-Potable Permits

Appendix D

Alternatives Screening Matrix

APPENDIX D—ALTERNATIVES SCREENING MATRIX

Scenario	Water Use	County	Potential User(s)	Volume of Water Needed (bpd)	Volume of Water Produced in County (bpd)	Match Between Supply and Demand	Located in an OCWP Hot Spot Basin	Year Around User	Treatment Required	Regulatory Challenges	Selected for Economic Evaluation	Notes
1.a	Agriculture/ Irrigation	Texas	Heimsoth Partners	217,739	149,403	X	X		X	X	N	Seasonality challenges
1.b		Texas	Russell Family Partnership	449,499	149,403	X	X		X	X	N	
1.c		Texas	Fischer Family Farms LP	227,681	149,403	X	X		X	X	N	
1.d		Texas	Stephens Land & Cattle Co Inc.	195,477	149,403	X	X		X	X	N	
1.e		Texas	Chemical Spray for Agriculture/Irrigation	<10,000 ²	149,403		X		X	X	N	
2.a	Power	Pawnee	Oklahoma Gas and Electric Company	1,550,729	93,787	X		X	X	X	Y	Large volumes of produced water generated in adjacent counties Kay and Noble
2.b		Oklahoma	Oklahoma Gas and Electric Company	203,617	191,323	X		X	X	X	N	
2.c		Seminole	Oklahoma Gas and Electric Company	743,499	329,065	X		X	X	X	Y	Large volumes of produced water generated in adjacent county Pontotoc
3.a	Mining	Dewey	Kauk Mike and LaDena	223,199	122,762	X			X	X	N	Seasonality of use is unknown; assumed to require similar treatment as Power and Industrial users

APPENDIX D—ALTERNATIVES SCREENING MATRIX

Scenario	Water Use	County	Potential User(s)	Volume of Water Needed (bpd)	Volume of Water Produced in County (bpd)	Match Between Supply and Demand	Located in an OCWP Hot Spot Basin	Year Around User	Treatment Required	Regulatory Challenges	Selected for Economic Evaluation	Notes
4.a	Industrial	Muskogee	Georgia-Pacific Consumer Products (Manufacturing of Consumer Products, Tissue)	752,741	4,108			X	X	X	N	Small volumes of produced water in adjacent counties Wagoner, Okmulgee
4.b		Kay	Phillips Refinery	131,748	173,719	X		X	X	X	N	
4.c		Garfield	Koch (Chemical Manufacturing) ³	238,095	146,793	X		X	X	X	N	
4.d		Grant	Medford OK Natural Gas Liquids Fractionator	30,000	109,502	X		X	X	X	Y	Added as a result of 11/02/2016 Meeting; Facility is uniquely positioned in Mississippi Lime Play and has several existing lined pits to store water;
5.a	Re-use Clean Brine - Oil and Gas	Alfalpa to Blaine	Oil and Gas - Transfer Produced Water from Mississippi Lime to Stack Play	250,000	600,560	X	X	X	X	X	Y (Case 3)	
6.a	Aquifer Storage and Recovery - Oil and Gas	Alfalpa	Oil and Gas - Store treated produced water in saline aquifer	TBD	600,560	X		X	X	X	N	Regulatory challenges and water quality issues make this scenario unfeasible

APPENDIX D—ALTERNATIVES SCREENING MATRIX

Scenario	Water Use	County	Potential User(s)	Volume of Water Needed (bpd)	Volume of Water Produced in County (bpd)	Match Between Supply and Demand	Located in an OCWP Hot Spot Basin	Year Around User	Treatment Required	Regulatory Challenges	Selected for Economic Evaluation	Notes
7.a	Surface Water Discharge	Beckham	Irrigation - Lugert-Altus Irrigation District	1,819,025	22,323		X	X	X	X	Y	Added as a result of 11/02/2016 Meeting
7.b		Grant	Salt Fork Arkansas River (downstream of Great Salt Plains Lake)	NA	109,502			X	X	X	Y	Not feasible to discharge into the Great Salt Plains Lake due to the sensitive ecosystem; TDS<4000; national reserve for threatened and endangered species; alternatively looked at a surface water discharge point along the Salt Fork Arkansas River downstream of the Lake.

Appendix E

Cost Estimate Assumptions

APPENDIX E

Cost Estimate Assumptions

Conceptual Design Assumptions:

- Pipeline diameters were estimated based on a velocity of 7 fps.
- Pipelines are assumed to be HDPE DR11.
- Pump stations were located approximately every 10 miles; detailed hydraulic analysis was not performed at this time.
- Impoundment volumes were assumed to be 20% greater than the estimated treatment volume.

The following markups were assumed on all unit costs:

- Contractor overhead – 10%
- Contractor profit – 5%
- Mob/Bonds/Insurance – 5%
- Contingency for items without vendor quotes – 30%
- Contingency for items with vendor quotes and labor – 10%
- Engineering – 10%
- Service During Construction – 7%
- Commissioning and Startup – 2%
- Land Acquisition – 10%
- Permitting – no additional markups were added specifically for permitting at this level of design. Permitting costs are assumed to be covered in the markups identified above.

Message

From: Rathbone, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=811CD8A9F9FC408FA4BC150ECA5AEAE-RATHBONE, COLLEEN]
Sent: 3/28/2018 4:00:23 PM
To: Wilson, Scott [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=71be83d0322a4d55ac2c4214704d0fe8-Wilson, Scott_93ec10d897]; Chadwick, Dan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9d43be9e38404a8f8ae92283d00907cf-Dchadwic]; Pritts, Jesse [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=377a4bb09a164281921d55ab06e188ae-JPritts]
Subject: RE: Studies on 40 CFR 435 Subpart E

We have the subpart E tool which is an interactive database on pollutants and uses from literature. Region 8 has also been doing some work with RARE, "Using a biosensor tool to evaluate the safety of produced water for beneficial reuse during drought conditions in the west, Year 2 (FY19)."

I've got a pretty good sense of how subpart E is implemented since most of the permits are in Region 8. Let me know if you want to chat.

Colleen Rathbone | Manager, Wastewater Unit | U.S. Environmental Protection Agency - Region 8

Personal Phone / Ex. 6

From: Wilson, Scott
Sent: Wednesday, March 28, 2018 9:54 AM
To: Chadwick, Dan <Chadwick.Dan@epa.gov>; Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: Rathbone, Colleen <Rathbone.Colleen@epa.gov>
Subject: RE: Studies on 40 CFR 435 Subpart E

I am not thinking of any studies off hand, but copied Region 8 in case I'm forgetting something.

Scott Wilson
Acting Chief
Industrial Permits Branch
USEPA Office of Wastewater Management
1200 Pennsylvania Ave., NW
Washington, DC 20460
Personal Phone / Ex. 6
Mail Code: 4203m

From: Chadwick, Dan
Sent: Wednesday, March 28, 2018 11:51 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>; Wilson, Scott <Wilson.Js@epa.gov>
Subject: Studies on 40 CFR 435 Subpart E

Do either of you know if we have done any studies on the oil and gas wastewater beneficial use permits and activity? Jesse are you studying this in your work?

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 7/3/2018 6:43:44 PM
To: jpenveng@gmail.com
Subject: FW: Oil and Gas Study Trips for Rob

From: Matuszko, Jan
Sent: Tuesday, July 03, 2018 11:18 AM
To: Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>
Cc: Wood, Robert <Wood.Robert@epa.gov>; Pritts, Jesse <Pritts.Jesse@epa.gov>; Milam, Karen <Milam.Karen@epa.gov>
Subject: Oil and Gas Study Trips for Rob

1. Here is the website for the GWPC Annual Forum which contains the link to the registration and hotel information:

<http://www.gwpc.org/events>

I booked the hotel starting 9/10 and checking out on 9/13. There are workshops on the 13th that we may need to attend.

I booked direct flights in/out of Dulles in the evenings of 9/10 and 9/13. Since I prepared the TA, you and Harvette should be able to see my flight info.

Jesse, Rob, me, and possibly Karen all need a training request completed and then registration completed as well. It would be fantastic if Harvette did that for all of us. Or perhaps Rob can ask the GWPC to waive that registration fee.

2. Rob needs to fly to Denver for a GWPC meeting on 8/2 as well. That's all I know about that one so I hope Rob has more info.
3. Jesse is arranging for site visits in CA. They are not yet confirmed. Likely on 7/25 and 7/26. Closest airport is San Luis Obispo. It's possible he and Deborah may want to go on those site visits. Jesse will provide additional information once they are confirmed. This week is tough since lots of folks are on vacation.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/6/2018 7:59:59 PM
To: Lawrence, Rob [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b22505b64aee401eba1a31e9b50f61d1-Lawrence, Rob]; Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
CC: Kenney, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ce6ff86939e44da49d88840b2353f022-Kenney, James]
Subject: RE: NM Trip

Hi Rob – in advance of HQ's visit to NM later this month, it probably makes sense for us to talk to you and other folks in the regional office to get your thoughts and perspective on oil and gas wastewater recycle, reuse, disposal, etc. in R6 states, in particular what challenges you foresee related to greater reuse/recycle as well as NPDES permitting. If you can let me know who in addition to yourself it would make sense to include in that discussion, I'll look at calendars and get a call scheduled in the next two weeks.

Thanks,
Jesse

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel Personal Phone / Ex. 6

From: Lawrence, Rob
Sent: Friday, March 23, 2018 8:53 AM
To: Matuszko, Jan <Matuszko.Jan@epa.gov>
Cc: Kenney, James <Kenney.James@epa.gov>; Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: NM Trip

Jan – thanks for the heads up on your trip. Not sure if you are aware, but NM Environment Department nor the NM Energy, Minerals, and Natural Resources Department (Oil Conservation Division) are delegated the NPDES program. Any of these prospective treatment facilities (or production sites seeking to discharge under the agriculture / wildlife beneficial use provision) would need to apply to Region 6 for any discharges. I have tried to remind those involved at every opportunity of that situation and have offered to host a meeting of prospective applicants with the appropriate regional staff. To date, we haven't had such a meeting, although at least one prospective applicant on a conference call acknowledged the NPDES permit issue.

Let me know if I can assist as you make your plans.

Rob Lawrence
Region 6
Policy Advisor - Energy Issues
Personal Phone / Ex. 6

From: Matuszko, Jan
Sent: Friday, March 23, 2018 6:58 AM
To: Lawrence, Rob <Lawrence.Rob@epa.gov>
Cc: Kenney, James <Kenney.James@epa.gov>; Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: FW: NM Trip

Hi Rob,

As I mentioned in one of the fairly recent UOG calls, we are embarking on a CWA holistic study of management of produced water. Seems like NM, OK, etc are quite interested in alternatives to underground injection. We are planning a trip to NM the end of April to talk to various stakeholders. Wanted to give you a heads up that we'd be in your stomping ground and what we are doing (see e-mail below). Once I have an itinerary and know exactly who we are going to be meeting with, I'll let you know that as well.

Happy to discuss further if that is helpful. Jan

P.S. I am going to be out of the office starting later today and returning the Monday after Easter.

From: Matuszko, Jan

Sent: Friday, March 23, 2018 7:52 AM

To: Kenney, James <Kenney.James@epa.gov>

Cc: Pritts, Jesse <Pritts.Jesse@epa.gov>; Milam, Karen <Milam.Karen@epa.gov>

Subject: NM Trip

Hi Jim,

Thanks for the engaging conversation the other afternoon and for continuing to work towards an itinerary for our trip to New Mexico the last full week in April (we'd fly out on 4/26). As I mentioned, I am expecting three of us will travel: me, Jesse (engineer) and Karen (an economist).

The purpose of this trip is to "get our feet wet" with our new Clean Water Act holistic study of management of produced water. We understand there are factors, at least in some areas of the country, that may be changing the historical approach of managing produced water via underground injection wells. Through this study, we are engaging with stakeholders, and in particular states, to consider approaches to manage both conventional and unconventional oil and gas extraction wastewaters from onshore facilities, including but not limited to an assessment of technologies for facilities that treat and discharge oil and gas extraction wastewaters.

We understand that New Mexico has been exploring the concept and application of renewable water, that is water generated from an oil or natural gas well that undergoes treatment and is now available for addition to the hydrologic cycle as opposed to disposal in an underground injection well. We want to learn from that experience and exploration to date. Some initial possible areas of discussion include:

- How are produced waters currently managed in NM?
- Are there other alternatives you would like to ensure are available? If so, what are they and why (what's driving it)?
- What barriers do you see for any current or future produced water management alternatives?
- Do you support federal regulations that allow for the discharge of treated produced water to surface waters and/or municipal wastewater treatment plants? Why? What concerns do you have with such an approach?
- Does your state have any permitted facilities that treat and discharge produced waters? What challenges, if any, were associated with that permitting?
- What level of treatment do you think is required for produced waters that will be discharged to surface waters and/or POTWs?
- Are there existing state regulations/requirements that would conflict with a different federal approach to produced water management (e.g., water rights)?

Of course, there may be other relevant areas of discussion that the stakeholders we plan to meet with would like to discuss with us and they should not feel limited by the areas identified above.

Thanks in advance to your contacts that have been so receptive to these conversations.

I am out of the office a little later today and all of next week. If you need to coordinate in my absence, please contact Jesse (cc'd above) or at Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/24/2018 2:34:30 PM
To: Dan Mueller [dmueller@Personal Address / Ex. 6]; sanderson@Personal Address / Ex. 6
Subject: Meeting in Austin in June

Hi Scott and Dan – we are planning to travel to Austin to meet with various stakeholders on the oil and gas study in June. Would you be interested in an in-person meeting with the EPA team to discuss the study? We are tentatively looking at the week of June 18. Let me know if you would like to meet. Here's a bit more description of the study and specific topics we are interested in discussing.

Our produced water study will take a holistic look at how EPA, states and stakeholders regulate and manage wastewater from the oil and gas industry. During the study, EPA intends to engage with stakeholders to evaluate approaches to manage both conventional and unconventional oil and gas extraction wastewater from onshore facilities including, but not limited to, an assessment of technologies for facilities that treat and discharge oil and gas extraction wastewater. More information is now available online at : <https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>.

To help frame discussions, we are providing stakeholders with a list of discussion topics:

1. Produced water management - pros/cons with the status quo.
2. Produced water management alternative options - technologies, availability, drivers, etc.
3. Current or future produced water management barriers to alternatives.
4. Concerns related to federal regulations that allow for the discharge of treated produced water to surface waters and/or to municipal wastewater treatment.
5. Challenges to permitting facilities that treat and discharge produced waters.
6. Appropriate level of treatment required for produced waters that will be discharged to surface waters and/or Publicly Owned Treatment Works (POTWs).
7. Existing state regulations/requirements that conflict with a different federal approaches to produced water management (e.g., water rights).

Recognizing there may be other relevant areas of discussion not covered above, we encourage stakeholders to bring such topics to our attention. We welcome individual feedback from states, tribes, industry, etc. on the produced water study.

Thanks,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 2/9/2018 7:31:10 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: RE: Oil and Natural Gas Roundtable: February 27-28, 2018
Attachments: Clean Water Act Talking Points for Oil and Gas Roundtablev1 JP.docx

A couple minor comments.

From: Matuszko, Jan
Sent: Friday, February 09, 2018 9:34 AM
To: Wood, Robert <Wood.Robert@epa.gov>; Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: FW: Oil and Natural Gas Roundtable: February 27-28, 2018

Draft talking points for Lee. Thoughts?

From: Wood, Robert
Sent: Friday, February 2, 2018 6:12 PM
To: Mclain, Jennifer <Mclain.Jennifer@epa.gov>
Cc: Thompkins, Anita <Thompkins.Anita@epa.gov>; Campbell, Ann <Campbell.Ann@epa.gov>; Tiago, Joseph <Tiago.Joseph@epa.gov>; Lape, Jeff <lape.jeff@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>
Subject: Re: Oil and Natural Gas Roundtable: February 27-28, 2018

+Jan

Robert Wood
Engineering and Analysis Division
U.S. EPA, Office of Water

Personal Phone / Ex. 6

On Feb 2, 2018, at 6:11 PM, Wood, Robert <Wood.Robert@epa.gov> wrote:

Will do. Any deadline yet?

Anita, do you have a lead BC or staff? Our lead BC is Jan Matuszko.

Robert Wood
Engineering and Analysis Division
U.S. EPA, Office of Water

Personal Phone / Ex. 6

On Feb 2, 2018, at 5:15 PM, Mclain, Jennifer <Mclain.Jennifer@epa.gov> wrote:

Anita & Rob – Lee F will need briefing materials in preparation for the rescheduled Oil & Natural Gas Roundtable. I think it would be best to consolidate the information into a few topic papers on issues participants may raise. Please coordinate on how best to pull this together.

Let me know if you would like to discuss.

Thanks
Jennifer

From: McLain, Jennifer
Sent: Friday, February 02, 2018 5:08 PM
To: Kenney, James <Kenney.James@epa.gov>
Cc: Thompkins, Anita <Thompkins.Anita@epa.gov>
Subject: RE: Oil and Natural Gas Roundtable

Jim – Lee Forsgren will now represent OW at the upcoming Oil and Natural Gas Roundtable. As we prepare for the meeting, we would appreciate any new insights you may have on potential water issues participants may raise based on the pre-meeting input you requested last month.

Thanks much,
Jennifer

Jennifer L McLain
Acting Deputy Director
Office of Ground Water and Drinking Water
U.S. EPA

Personal Phone / Ex. 6

From: Kenney, James
Sent: Thursday, February 01, 2018 4:47 PM
To: Wagner, Kenneth <wagner.kenneth@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>; Benevento, Douglas <benevento.douglas@epa.gov>; Traylor, Patrick <traylor.patrick@epa.gov>; Letendre, Daisy <letendre.daisy@epa.gov>; Idsal, Anne <idsal.anne@epa.gov>; Beeler, Cindy <Beeler.Cindy@epa.gov>; Bohan, Suzanne <bohan.suzanne@epa.gov>; Chapman, Apple <Chapman.Apple@epa.gov>; Mia, Marcia <Mia.Marcia@epa.gov>; Lawrence, Rob <Lawrence.Rob@epa.gov>; Teichman, Kevin <Teichman.Kevin@epa.gov>; Werntz, James <Werntz.James@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Werntz, James <Werntz.James@epa.gov>; McLain, Jennifer <McLain.Jennifer@epa.gov>; Kenney, James <Kenney.James@epa.gov>
Subject: Oil and Natural Gas Roundtable

Hello EPA Oil and Natural Gas Roundtable Participant:

I am writing as a follow-up to Ken's email. Below please find additional logistics and information related to the upcoming roundtable.

Confirming Participation:

- Leadership team - If your ability to participate has changed, please let me know as soon as possible so I can work on updating the draft agenda, seating, etc.

- Career team - If your ability to participate has changed, please let me know as soon as possible as we may need additional logistics and note-taking support, especially during the breakout sessions.

Roundtable Dates and Location:

- The roundtable will take place on Tuesday, February 27 and Wednesday, February 28, 2018 at EPA's Regional Office, 1595 Wynkoop Street, Denver, Colorado 80202.

EPA Conference Code:

- For travel authorizations/vouchers, the project code assigned to this conference is MS 111150.

Hotel Room Block:

- EPA re-established a hotel room block at the Hotel Indigo Denver Downtown ([1801 Wewatta, Denver, Colorado 80202](#)).
- Use this [new link](#) to ensure you receive the federal rate of \$180/night (provided the room block does not sell out).
- Click the link > click "book online" > enter the arrival date of Mon., 2/26 and departure date of Wed., 2/28 > click "book" and confirm that the quoted rate is \$180/night.
- If you have reservation questions or issues, please call the hotel at (303) 416-8520.

Roundtable Materials:

- I do not anticipate any substantive changes to the previously shared draft agenda, background materials, and internal briefing materials.
- Approximately one week before the roundtable, you will receive all of these materials again via email.

If you have any questions, please let me know.

Thanks,

Jim

--

James C. Kenney | Senior Policy Advisor | Unconventional Oil and Gas | US EPA

Desk/Mobile: [Personal Phone / Ex. 6](#) | Email: kenney.james@epa.gov

Please note: I am geographically located in Albuquerque, New Mexico (Mountain Time Zone).

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Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/6/2018 6:21:10 PM
To: Strassler, Eric [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a3a8f78f805945798f98e896a3f3405f-EStrassl]; Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: RE: Oil & Gas Web site

Looks good – thanks Eric.

From: Strassler, Eric
Sent: Friday, April 06, 2018 1:20 PM
To: Matuszko, Jan <Matuszko.Jan@epa.gov>
Cc: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Oil & Gas Web site

Here is the new draft web page for the O&G study.

<https://wcms.epa.gov/user/login?destination=/node/202687/revisions/662637/view>

(Log in with your LAN ID)

Note: The links on this study page lead to the currently published pages for O&G and CWT, not the new draft revisions. I will send you separate links for the new draft revisions.

From: Matuszko, Jan
Sent: Friday, April 06, 2018 12:41 PM
To: Strassler, Eric <Strassler.Eric@epa.gov>
Cc: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Re: Oil & Gas Web site

I agree.

Also, I have been thinking some more about the oil and gas wastewater study. Our position is that it's not about the oil and gas rule or the CWT rule. So, it needs its own web page.

See revised language in the attachment.

From: Strassler, Eric
Sent: Friday, April 6, 2018 12:17 PM

To: Matuszko, Jan
Subject: RE: Oil & Gas Web site

I am working on the O&G web page changes. The paragraph on the voluntary remand should be placed on the Unconv. Rule page rather than the O&G home page. I will send you links to the draft pages.

From: Matuszko, Jan
Sent: Thursday, April 05, 2018 3:15 PM
To: Strassler, Eric <Strassler.Eric@epa.gov>
Subject: FW: Web site

From: Matuszko, Jan
Sent: Wednesday, April 4, 2018 1:17 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>; Damico, Brian <Damico.Brian@epa.gov>; Milam, Karen <Milam.Karen@epa.gov>
Subject: RE: Web site

Thanks for drafting this. I don't have any suggested edits on CWT and think you struck a good balance on the level of info.

I do have some edits to the oil and gas study. As we have been moving along with the study, we've been working on how we describe it and our talking points, so I edited that language with that in mind. I also think that one should be first on the web page. Rob will want a chance to weigh in on how we communicate on oil and gas. I've sent to him so this could change again.

From: Pritts, Jesse
Sent: Tuesday, April 3, 2018 4:30 PM
To: Matuszko, Jan <Matuszko.Jan@epa.gov>; Damico, Brian <Damico.Brian@epa.gov>; Milam, Karen <Milam.Karen@epa.gov>
Subject: FW: Web site

Jan and Brian – here are suggested edits to the CWT and oil and gas web pages to address the new study (and other items). Let me know if you have any comments, and we can get them to Eric when he is back in the office.
Thanks

From: Milam, Karen
Sent: Tuesday, April 03, 2018 2:44 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Web site

Jesse,

CWT page looks great! I added some text for the UOG section of oil and gas webpage (thanks for letting me add in).

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Thanks!
Karen

From: Pritts, Jesse
Sent: Tuesday, April 03, 2018 1:36 PM
To: Milam, Karen <Milam.Karen@epa.gov>
Subject: FW: Web site

I'm looking at the oil and gas web site right now. Do you want to update anything, either on the main oil and gas page or the UOG page, about the PA effort as Jan suggested? If so, let me know and we'll combine. Also, here's what I suggest for the holistic study and the CWT web page.

From: Matuszko, Jan
Sent: Friday, March 23, 2018 3:32 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>; Siddiqui, Ahmar <Siddiqui.Ahmar@epa.gov>; Tripp, Anthony <Tripp.Anthony@epa.gov>; Milam, Karen <Milam.Karen@epa.gov>
Cc: Strassler, Eric <Strassler.Eric@epa.gov>; Damico, Brian <Damico.Brian@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>
Subject: Web site

When we publish the ELG plan, we are also going to need to revise some of the industry specific web sites.

Each of you in the to list received this because you are responsible for one or more of the projects that are changing status in the final 2016 plan. Please look at the industry specific web-site and provide suggested edits to Eric so that he can start to work those up.

Tony- Will need a couple of sentences or a paragraph talking about the detailed study. You can look at the petroleum refining and CWT sites to get an idea of what is needed.

Ahmar- Will need to say we completed our investigation and prepared a report that summarizes the info and then link to that report. I still owe you comments on that report.

Jesse- the main work is for you. CWT will need to have a pointer to the document that is a compilation of the data we have collected to date (not a study completion) and a link/pointer to holistic oil and gas study.

Then we will need something added to the oil and gas web site that talks about the holistic study.

Karen should probably add something to the oil and gas website on our effort regarding the PA facilities and UOG.

You all can look to the summary in the plan themselves if that helps.

Any questions, see Brian and/or Eric.

Would be great if we have drafts by 4/2.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/24/2018 1:21:03 PM
To: David Gratson [DGratson@Personal Address / Ex. 6]
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Yes, there was a FR notice announcing the study as part of our effluent guidelines planning process, but the info. in that notice is the same as what is on our web page. In any case, here is the link to that notice:

<https://www.epa.gov/eg/current-effluent-guidelines-program-plan>

From: David Gratson [mailto:DGratson@Personal Address / Ex. 6]
Sent: Thursday, May 24, 2018 9:04 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Jesse,

Thank you for the clarification. I also thought there was one or more Federal Register (FR) notices associated with this study, but haven't located any. Is that the case, there have been no FR notices?

Dave

From: Pritts, Jesse [mailto:Pritts.Jesse@epa.gov]
Sent: Thursday, May 24, 2018 6:46 AM
To: David Gratson <DGratson@Personal Address / Ex. 6>
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Hi David – So far, the only information available is on our website. This study is not data-focused, therefore we have not developed the documents you describe. Rather, this is primarily an outreach study where we are engaging with stakeholders to understand their experience and concerns regarding produced water management specifically in the context of EPA's Clean Water Act regulations. At the end of that outreach process, we will report-out on what we have learned and develop a white paper summarizing those findings.

Does that answer your questions? I'd be happy to follow-up if there are specific items you are interested in learning more about. Here is a link to our web site.

<https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel. [Personal Phone / Ex. 6]

From: David Gratson [mailto:DGratson@Personal Address / Ex. 6]
Sent: Wednesday, May 23, 2018 6:52 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Study of Oil and Gas Extraction Wastewater Management

Jesse,

I am looking for the latest information on this EPA study - Study of Oil and Gas Extraction Wastewater Management. Have you developed a Program Plan, Scope, and Quality Assurance Project Plan for this study? Where can I receive what you have made public since the beginning of this year, and since initiating this study and the May announcement?

Regards,

David Gratson, CEAC
Senior Technical Chemist
Environmental Standards, Inc./Vitale Scientific Associates, LLC

Personal Address / Ex. 6 • dgratson@ Personal Address / Ex. 6

Personal Phone / Ex. 6

Emergency Response Quality Assurance Hotline: 855.374.7272



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Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/24/2018 12:46:25 PM
To: David Gratson [DGratson@
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Hi David – So far, the only information available is on our website. This study is not data-focused, therefore we have not developed the documents you describe. Rather, this is primarily an outreach study where we are engaging with stakeholders to understand their experience and concerns regarding produced water management specifically in the context of EPA's Clean Water Act regulations. At the end of that outreach process, we will report-out on what we have learned and develop a white paper summarizing those findings.

Does that answer your questions? I'd be happy to follow-up if there are specific items you are interested in learning more about. Here is a link to our web site.

<https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel.

From: David Gratson [mailto:DGratson@
Sent: Wednesday, May 23, 2018 6:52 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Study of Oil and Gas Extraction Wastewater Management

Jesse,

I am looking for the latest information on this EPA study - Study of Oil and Gas Extraction Wastewater Management. Have you developed a Program Plan, Scope, and Quality Assurance Project Plan for this study? Where can I receive what you have made public since the beginning of this year, and since initiating this study and the May announcement?

Regards,

David Gratson, CEAC
Senior Technical Chemist
Environmental Standards, Inc./Vitale Scientific Associates, LLC

Personal Address / Ex. 6
Personal Phone / Ex. 6
Personal Email / Ex. 6
Personal Email / Ex. 6
Personal Email / Ex. 6
dgratson@

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Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 6/27/2018 12:24:19 PM
To: Deborah A. Deal-Blackwell [Deborah@**Personal Address / Ex. 6**]
Subject: RE: Requesting contact information

Hi Deborah – Thanks for reaching out about the EPA produced water study. We'd be happy to hear about technologies for treating oil and gas wastes. Our focus is treatment for discharge, as opposed to reuse, so information about TDS, organic, TENORM, etc. removal technologies would be most helpful. If you have information you would like to share, you can send that to me. Also, if you are in D.C. and would like to stop by to chat, I'd be happy to set that up. Just let me know.

Thanks,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel **Personal Phone / Ex. 6**

From: Deborah A. Deal-Blackwell [mailto:Deborah@**Personal Email / Ex. 6**]
Sent: Tuesday, June 26, 2018 2:52 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Requesting contact information

Good Afternoon!

I see that the EPA is conducting a study of oil and gas wastewater management, and I would appreciate finding out how to contribute information for this study.

<https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>

IX Power Clean Water is a spin-out from Los Alamos National Laboratory and is providing a new method for cleaning oil & gas wastewater that was developed at the Lab. Our team has traveled extensively and would be happy to provide share its insight with the EPA. We also have experience with processes used in Mexico, Russia and China.

How, and who can we contact to share what we have learned?

Thank you for your help and consideration,

Deb Deal

Deborah A. Deal-Blackwell, APR
CEO, IX Power Foundation, Inc.
V.P. Marketing & Public Affairs,
IX Power Clean Water

Personal Email / Ex. 6

Phone	Personal Phone / Ex. 6
Personal Address / Ex. 6	

Appointment

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 8/6/2018 12:12:55 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: Accepted: Oil and Gas Study
Start: 8/6/2018 2:00:00 PM
End: 8/6/2018 2:30:00 PM
Show Time As: Busy

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/6/2018 1:57:26 PM
To: Eric Strassler [Strassler.Eric@epa.gov]
CC: Jan Matuszko [Matuszko.Jan@epa.gov]; Karen Milam (Milam.Karen@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]
Subject: C&D web page
Attachments: Final CWT Study PDS_DCN CWT00311.pdf; Oil and Gas Web Page_040318KMMjm.docx; CWT web page.docx

Hi Eric – here is the revised text for the C&D web page. Jan and Brian have both reviewed. And the PDF of the study is attached. ERG has made this 508 compliant, but of course if you find anything that needs to be addressed just let me know. I gave it a May 2018 date, but if 304(m) goes live in April we can change this (or not).

Attached also is the current draft of the oil and gas web page changes. Jan has reviewed, but I believe we are waiting for Rob to review. Jan can correct me if I am wrong on that.

Thanks, and let me know if you have any questions.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/15/2018 6:00:09 PM
To: Elliott, Ross [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33cb08013cc94c21a3e3236dbad4c4a4-REELLIOT]
Subject: RE: oil and gas study

Thanks I'll look at calendars and see what works.

From: Elliott, Ross
Sent: Tuesday, May 15, 2018 1:32 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: oil and gas study

Jason mills
Elaine eby
Steve souders
Bonnie Robinson

Is that too many? If so, Jason (our technical person most involved w/ produced waters) and Elaine (team leader for our consent decree work).

But if all are an option, that would be good. Thanks.

From: Pritts, Jesse
Sent: Thursday, May 10, 2018 12:56 PM
To: Elliott, Ross <Elliott.Ross@epa.gov>
Subject: oil and gas study

Hi Ross – I'd like to get some time for us to catch up on each other's oil and gas related activities. If you can let me know who on your end to include, I'll get something on the calendar.
Thanks

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 2/7/2018 7:17:22 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: RE: Oil and Gas

I have been thinking about this too, but not a lot. I've been focusing on wrapping up the CWT study, which I should be done with tomorrow afternoon. I can jump into this then. I can share something with you on Friday, if that works.

From: Matuszko, Jan
Sent: Wednesday, February 07, 2018 2:01 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Oil and Gas

Jesse,

There is interest in moving out on the oil and gas study. In fact, Rob would like to start talking to Deborah about it and then to our politicals. In order to do that, there are some things I need from you (ideally this week).

- 1). Outline of the steps we plan to take and associated schedule
- 2). Who are the players? How are we going to engage? and at what level
- 3). What do we need in terms of resources (dollars and people)?
- 4) Anything else you think is relevant.

I have been thinking about this a lot and am wondering about staffing. I see a lot of outreach here and you and I are both introverts....

To get us going, I put together a spreadsheet of the players of which I am already aware. If I didn't indicate that we need a contact, then that means I think I have one. This is to help us plan and to look at this big picture so we can determine where to engage and at what levels (us, Deborah, Lee/Dave, multiple). Please look over and add any of which you are aware. I didn't yet go back and look at the commenters to the plan to see if there are any there we should add. Once you add your info, I think we should share with Jim to see if he has any thoughts or any of the needed contacts.

Frankly, I have been reading lots of material and I think there is general agreement that we are talking about treatment for certain pollutants if we are talking discharge. I don't think most folks want to go that way (not economical), but they want that option....

Let me know if completing these tasks this week is problematic. Happy to discuss.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 8/29/2018 12:32:47 PM
To: Scozzafava, MichaelE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bd15262a06994ecca083bbc76cbc7080-MEScozza]
Subject: RE: Presentation Materials
Attachments: EPA Oil and Gas Study June 21 2018-share.pptx

Hi Mike – I put this together for one of the meetings we had with industry in Texas.

From: Scozzafava, MichaelE
Sent: Wednesday, August 29, 2018 8:24 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Presentation Materials

Hey Jesse,

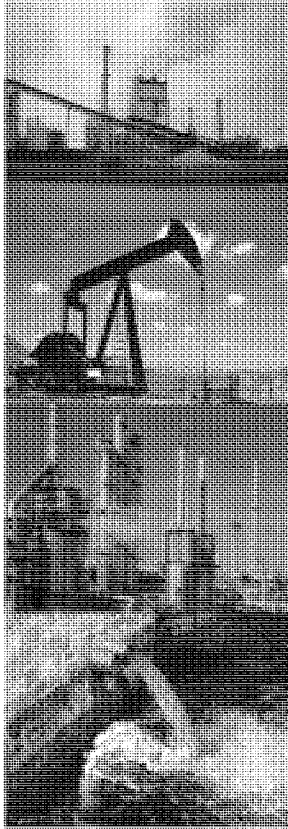
Do you have any existing powerpoint presentations on the study? I ask because Deborah would like to create a slide on “water reuse” for her WEFTEC presentation that will be focused on the study. I think I can gin up a first draft on my own, but If I can get it started using materials you have even better.

Thanks!

Mike

Michael Scozzafava, Deputy Director
Engineering and Analysis Division
OW/OST

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EPA Oil and Gas Extraction Study Effluent Guidelines Program

Presented at:

Texas Stakeholders Meeting
Austin, Texas
June 2018

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Welcome

Overview of Clean Water Act framework, focusing on:

Water quality standards

Regulatory program for water discharges from point sources (industrial facilities, municipal sewage treatment, storm water runoff from certain types of activities)

Enforcement overview

Assessments of water quality to identify impaired waters and causes of impairments

NPDES Program Background

- The National Pollutant Discharge Elimination System (NPDES) was created in 1972 by the Clean Water Act (CWA)
- Addresses water pollution by regulating point source discharges of pollutants to waters of the United States
- A point source is a discernible, confined and discrete conveyance, including... any pipe, ditch, channel, tunnel, conduit...
- Applies to industrial sources as well as discharges from municipal wastewater treatment plants
- The goal of the CWA is zero discharge of pollutants

NPDES Permits

- Any discharge of pollutants to surface waters or to municipal sewage treatment plants must obtain authorization to discharge (i.e., a permit).
- NPDES permits contain both technology-based effluent limitations as well as water quality-based effluent limitations
- Water quality-based effluent imitations are protective of the water quality of the receiving water. Water quality goals for water bodies are defined by state water quality standards.
 - Restoring and maintaining the chemical, physical and biological integrity of waters
 - Protection and propagation of fish, shellfish and wildlife and recreation in and on the water

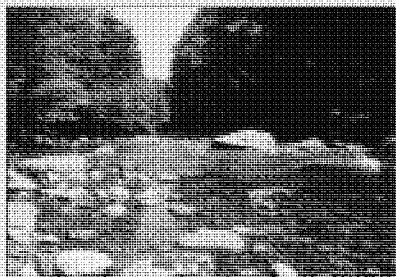
Technology-Based Permit Limits

- - *What are their objective?*

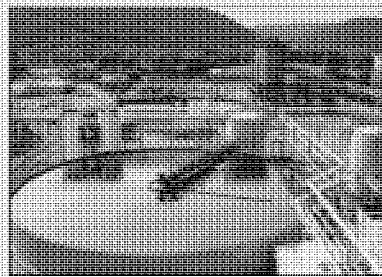
- Intended to define the minimum level of pollution control for industrial wastewater
 - Determined by assessing the pollution reduction capability of manufacturing process controls and wastewater treatment technologies
 - “end-of-the-pipe” pollutant limits
 - process changes and best management practices (BMPs) may also be specified
 - performance based (do not mandate the use of a specific technology)
- Provide equity among dischargers with an industry sector
 - Industry-specific (e.g., paper mills, oil & gas activities, steel mills)
 - Apply to all facilities throughout the country within the industry sector
- Not based on the water quality of individual receiving waters
 - Intended to avoid the difficulties of linking water quality impacts to specific pollutant sources

How are the Discharge Limits in NPDES Permits Determined?

Water Quality Standards



Technology-Based Limits



The more stringent limit applies!

NPDES Permit Discharge Limit

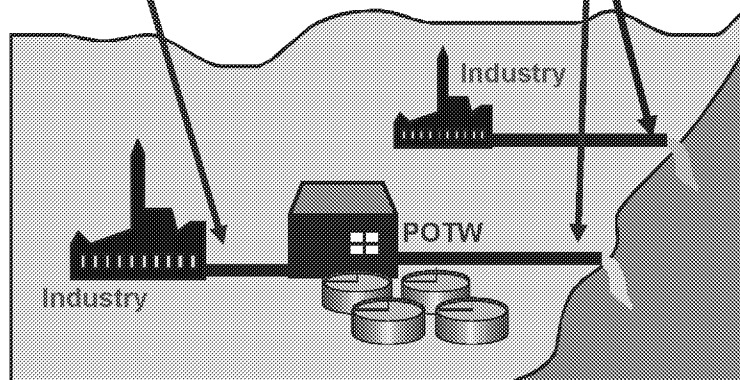
Programs to Control Industrial Discharges

- **National Pretreatment Program**

- Controls for industrial & commercial facilities that discharge wastewater to sewage treatment plants
- Controls interference and pass-through of pollutants

- **National Pollutant Discharge Elimination System (NPDES) discharge permits**

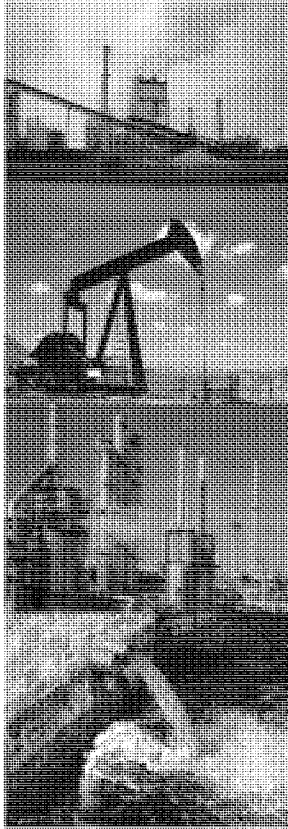
- Permits for industrial & commercial facilities that discharge directly to surface waters ("direct dischargers")
- Permits for sewage treatment plants



The Clean Water Act established two national programs to control pollutant discharges into surface waters from industrial sources. The first is the National Pollutant Discharge Elimination System (NPDES). The second is the National Pretreatment Program.

Success of the Effluent Guidelines Program

- EPA has published technology-based effluent guidelines and standards for 57 major industrial categories (with over 450 subcategories).
- Measurable environmental improvement
 - Effluent guidelines (as incorporated into permits) prevent discharges of almost 700 billion pounds of pollutants annually
 - Incorporated into permits for 35,000 – 45,000 direct discharging facilities and more than 12,000 indirect discharging facilities
- Forty year history based on solid foundation of data and analysis.



EPA Oil and Gas Extraction Study

Presented at:
Texas Stakeholders Meeting
Austin, Texas
June 2018

8

Welcome

Overview of Clean Water Act framework, focusing on:

Water quality standards

Regulatory program for water discharges from point sources (industrial facilities, municipal sewage treatment, storm water runoff from certain types of activities)

Enforcement overview

Assessments of water quality to identify impaired waters and causes of impairments

Effluent Guidelines affecting Oil and Gas Produced Fluids

- EPA has two regulations that affect discharge of oil and gas extraction wastewaters:
 - Oil and gas extraction effluent guidelines
 - 40 CFR Part 435
 - Centralized waste treatment effluent guidelines
 - 40 CFR Part 437

Oil and Gas Extraction Guidelines

- For onshore facilities, the oil and gas extraction guidelines generally prohibit discharge of pollutants in oil and gas extraction wastewaters directly to surface waters (zero discharge).
 - Exception is discharge for beneficial reuse west of 98th meridian
- Also, discharge of pollutants from unconventional extraction activities to POTWs is prohibited

Centralized Waste Treatment (CWT) Guidelines

- CWT facilities accept wastewater from off-site for treatment or reuse
- CWT facilities can accept oil and gas extraction wastewater and can discharge
- CWT rules were not developed specifically for produced fluids, so the limitations and the technology basis are generally not sufficient for those wastewaters

Oil and Gas Study

- New study looking at how EPA, states and stakeholders regulate and manage wastewater from the oil and gas industry
- We are hearing that the zero discharge of pollutants standards may be more difficult to meet in future
- Also, concerns over water scarcity
- Focus of is to engage with stakeholders to consider available approaches to manage wastewater from both conventional and unconventional oil and gas extraction at onshore facilities
- Goal is to understand if broader discharge of treated produced waters to surface waters is supported

Process

- Conduct outreach and learn about the issues
 - May through September
- Report-out
 - October
- Prepare white paper
 - January
- Decide next steps

Discussion Topics

- Produced water management - pros/cons with the status quo.
- Produced water management alternative options - technologies, availability, drivers, etc.
- Current or future produced water management barriers to alternatives.
- Concerns related to federal regulations that allow for the discharge of treated produced water to surface waters and/or to municipal wastewater treatment.

Discussion Topics

- Challenges to permitting facilities that treat and discharge produced waters.
- Appropriate level of treatment required for produced waters that will be discharged to surface waters and/or Publicly Owned Treatment Works (POTWs).
- Existing state regulations/requirements that conflict with different federal approaches to produced water management (e.g., water rights).



Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 10/9/2018 7:06:16 PM
To: Eric Strassler [Strassler.Eric@epa.gov]
Subject: powerpoint from today
Attachments: EPA Oil and Gas Study October 9 2018 Public Meeting 10052018.pptx

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/5/2018 7:44:06 PM
To: Karen Milam (Milam.Karen@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]
Subject: FW: Oil and Gas Study Talking Points

FYI

From: Matuszko, Jan
Sent: Thursday, April 05, 2018 8:05 AM
To: Wood, Robert <Wood.Robert@epa.gov>
Cc: Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>; Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Oil and Gas Study Talking Points

Oil and Gas Study – 4//17

- The team is coordinating with Andrea Drinkard to develop a communication/outreach strategy. As part of that effort, they assembled a contact list of various stakeholders including states organizations, individual states, oil and gas industry representatives and organizations, academics, non-government organizations, technology vendors, and treatment facilities.
- The team is participating on EPA's Unconventional Oil and Gas POC meetings and is working closely with Jim Kenney, EPA's Senior Policy Advisor for Unconventional Oil and Gas.
- The team is traveling to New Mexico the week of April 23. New Mexico is leading much of the thinking on reuse, recycling and renewable water in terms of policy and technology based water scarcity issues and the booming Permian basin. The team is scheduled to meet with: 1) New Mexico's Energy, Minerals, and Natural Resources Department (EMNRD) including Cabinet Secretary, Ken McQueen and Deputy Cabinet Secretary, Matthais Sayer; 2) New Mexico's Environmental Department; 3) New Mexico Oil and Gas Association (NMOGA) including Deputy Director, Patrick Padilla, and 4) the Nature Conservancy. Region VI's UOG POC is aware that we will be traveling to New Mexico for this purpose.

Jan Matuszko
Chief, Engineering and Analytical Support Branch
Office of Water
Environmental Protection Agency

Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/14/2018 7:44:13 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: RE: outreach plan for management review
Attachments: Oil and Gas Study Outreach Plan_050718.docx

Well, that's odd. Here's the file. You can work on this one,

From: Matuszko, Jan
Sent: Monday, May 14, 2018 3:42 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: outreach plan for management review

Darn. Same message.

From: Pritts, Jesse
Sent: Monday, May 14, 2018 3:17 PM
To: Matuszko, Jan <Matuszko.Jan@epa.gov>
Subject: RE: outreach plan for management review

Try this link – let me know if it doesn't work.

Deliberative Process / Ex. 5

From: Matuszko, Jan
Sent: Monday, May 14, 2018 3:04 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: outreach plan for management review

Jesse,

I am unable to open this file. I also tried to access it by going directly to Sharepointe. I can see it but when I try to open it, it says I can't open the file.

From: Pritts, Jesse
Sent: Tuesday, May 8, 2018 9:56 AM
To: Matuszko, Jan <Matuszko.Jan@epa.gov>
Cc: Milam, Karen <Milam.Karen@epa.gov>
Subject: outreach plan for management review

Jan – here is the latest version Karen and I drafted. Let us know if you want to discuss.

Thanks

Deliberative Process / Ex. 5

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 8/16/2018 7:50:34 PM
To: Dressel, Paul [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=aef6d8272fa04f66857fae05433ae915-Dressel, Paul]
Subject: RE: outreach with PA on oil and gas study

Great! Thanks Paul. I'll be working tomorrow and Monday. Monday afternoon I travel to Oklahoma for a week of meetings, back on Friday. I'll be on email periodically next week, and I'd like to start contacting folks in PA next week so that we can check on availability. It looks like the week of Sept. 24th is what we are targeting. I found out that there is a PA CDAC committee meeting in Harrisburg on 9/27, so my understanding is that some from industry and academia will be in Harrisburg for that meeting. I am hoping that we can schedule meetings 9/25 and 9/26 in Harrisburg and that folks could come early to Harrisburg to meet with us about the study. I've already reached out to Dave Allard at PA DEP (I know him from past work on PA's TENROM study) and Adam Walters who is the CDAC contact (he is talking to his chairman about the best way to engage with CDAC). So you know, we were contacted by Congressman Glenn Thompson's office a couple months ago and they specifically asked that we engage with CDAC when we are in Pennsylvania. Also, I was contacted by PGCC and they plan to be available to meet with us in Harrisburg. I'm not sure what municipality might have reached out, but there's been a lot of email traffic. Looking forward to the other contacts you come up with.
Thanks again.

From: Dressel, Paul
Sent: Thursday, August 16, 2018 3:16 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: outreach with PA on oil and gas study

Jesse

I got your voicemail. I met with our EE workgroup on Tuesday.

I am still gathering information from the group. I have 2 state PADEP contacts

Seth Pelepko from the PADEP, Office of Oil and Gas Management and Ali Morris Tarquino from PADEP.

I understand that a local municipality reached out to you directly a few weeks back.

I will try to get you the complete list as soon as possible. I will be back in the office tomorrow

Paul G. Dressel, Deputy Director
US EPA, Region 3
Office of Enforcement, Compliance
and Environmental Justice

Personal Phone / Ex. 6
dressel.paul@epa.gov

From: Pritts, Jesse
Sent: Thursday, August 09, 2018 12:12 PM
To: Dressel, Paul <DRESSEL.PAUL@EPA.GOV>
Subject: outreach with PA on oil and gas study

Hi Paul – OW would like to conduct outreach with PA players in oil and gas produced water management for the national produced water study. Are you coordinating oil and gas activities for R3? We could use some help identifying stakeholders (state agencies, industry, NGOs, academia, etc.) that we should be engaging with and with some meeting logistics. We're thinking of a few in-person meetings in Philadelphia in September. Be great to talk to you, or others, about this effort and how R3 can support OW. Please let me know how best to proceed.

Thanks,
Jesse

=====
Jesse W. Pritts, P.E.
United States Environmental Protection Agency
Office of Water | Office of Science and Technology
te [[Personal Phone / Ex. 6](tel:)]
email. pritts.jesse@epa.gov
<https://www.epa.gov/eg>

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/25/2018 12:18:28 AM
To: Feret, Karen (Milam) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]; Pfeiffer, Tricia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3c7cd189c22a4b5589feaf5ef4b254f3-Pfeiffer, Tricia]; Clark, Amy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e65342fadadb43e3ac26a9426ab1f9d1-Clark, Amy]; Eric Strassler [Strassler.Eric@epa.gov]
Subject: FW: Oil and Gas Study/Public Meeting - Reporter Interview Request

I've always dreamed of being on the cover of Rolling Stone. In my youth, I wanted to be a bass player in a rock band. Alas, I decided to study engineering instead. I also never learned to play the guitar.

*"We take all kinds of pills that give us all kind of thrills
But the thrill we've never known
Is the thrill that'll gitcha when you get your picture
On the cover of the Rollin' Stone"*

From: Strassler, Eric
Sent: Monday, September 24, 2018 6:06 PM
To: Lalley, Cara <Lalley.Cara@epa.gov>
Cc: Wood, Robert <Wood.Robert@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Pritts, Jesse <Pritts.Jesse@epa.gov>; Feret, Karen (Milam) <Feret.Karen@epa.gov>
Subject: Oil and Gas Study/Public Meeting - Reporter Interview Request

Cara,

A reporter has requested an interview (see below). The request was sent to the email box for the Oil & Gas Study. The reporter plans to attend our October 9 public meeting, but he would also like to interview EPA people. The intended scope of his interview(s) may be broader than the Oil & Gas study, e.g. fracking.

I have sent Mr. Nobel a brief reply regarding the October 9 public meeting (this is standard for all attendees), and informed him that interview requests are handled by the press office. Please forward to the press/communications people as appropriate.

Thanks.
Eric

From: oil-and-gas-study
Sent: Monday, September 24, 2018 5:50 PM
To: Justin Nobel
Subject: RE: Magazine Journalist looking to attend Oct 9th EPA Public Meeting on new Oil and Gas Wastewater rules

Mr. Nobel,

Thank you for registering for the October 9 public meeting. Please note that this meeting is about EPA's ongoing scientific/technical study on the management of produced water from oil & gas wells, not about rulemaking.

Interviews with EPA managers and staff are scheduled through our press office. I will forward your request to the press office and they will contact you.

Eric Strassler
EPA

From: Justin Nobel [mailto:justinnobel@] Personal Email / Ex. 6

Sent: Sunday, September 23, 2018 10:15 AM

To: oil-and-gas-study <oil-and-gas-study@epa.gov>

Subject: Magazine Journalist looking to attend Oct 9th EPA Public Meeting on new Oil and Gas Wastewater rules

Dear EPA,

I am Justin Nobel with Rolling Stone Magazine and planning to attend this meeting. I am not looking to speak. I am in the process of writing a long story related to this topic, so I will be looking to interview appropriate EPA officials concerning these new rules. The meeting provides a nice opportunity to do so in person, please let me know if that can be arranged. Thanks very much.

Sincerely,
Justin Nobel

--

Justin Nobel

Personal Phone / Ex. 6

Personal Address / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 6/26/2018 4:25:32 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: RE: ACTION: Oil & Gas Survey 1-pager needed - Requested by COB tomorrow
Attachments: Oil and Gas Study Fact Sheet.docx

See attached.

From: Matuszko, Jan
Sent: Tuesday, June 26, 2018 10:04 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Fwd: ACTION: Oil & Gas Survey 1-pager needed - Requested by COB tomorrow

Can you please edit this as you see fit, fill in the requested info, and then send to me by around noon.

Sent from my iPhone

Begin forwarded message:

From: "Scozzafava, MichaelE" <Scozzafava.MichaelE@epa.gov>
Date: June 25, 2018 at 4:12:20 PM EDT
To: "Matuszko, Jan" <Matuszko.Jan@epa.gov>
Subject: FW: ACTION: Oil & Gas Survey 1-pager needed - Requested by COB tomorrow

I think this will work. Rob suggested adding a list of folks we've met with so far so that Dave has it as a reference at the meeting. I highlighted that in yellow and was hoping you or Jesse could fill it in.

Talk to you tomorrow.

Thanks!

mike

From: Crawford, Tiffany
Sent: Monday, June 25, 2018 2:55 PM
To: Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>
Cc: Wood, Robert <Wood.Robert@epa.gov>; Nagle, Deborah <Nagle.Deborah@epa.gov>
Subject: FW: ACTION: Oil & Gas Survey 1-pager needed - Requested by COB tomorrow
Importance: High

Hi Folks –

In preparation for Dave's talk at a National Drought Resilience partnership meeting later this week, the IO is requesting one-pager by COB tomorrow. See below for more detail.

I am sure you guys have developed tons of 1-pagers on this issue, but the only thing I have quick access to are the attached talking points. Hopefully this along with the engagement strategy and more recent documents will be helpful.

Tiffany N. Crawford
Special Assistant
US Environmental Protection Agency
Office of Science and Technology
Office of Water

Other Contact Information:

Email: Crawford.Tiffany@epa.gov

Office: Personal Phone / Ex. 6

From: Campbell, Ann

Sent: Monday, June 25, 2018 2:41 PM

To: Nagle, Deborah <Nagle.Deborah@epa.gov>; Crawford, Tiffany <Crawford.Tiffany@epa.gov>

Cc: Lousberg, Macara <Lousberg.Macara@epa.gov>

Subject: ACTION: Oil & Gas Survey 1-pager needed

Deborah, Tiffany – Dave will be attending the National Drought Resilience partnership meeting later this week and would like a one pager on the oil & gas survey. I thought for sure I already had background on this but I either I’m misremembering or can’t put my fingers on it. Can you all provide a one-pager by COB tomorrow? Copying Macara as the request originated in a meeting she was attending. Please weigh in Macara if something more is needed.

Thanks all!

Ann Campbell
Chief of Staff (acting)
Office of Water

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/11/2018 5:40:38 PM
To: Lela Hunt [LHunt@[redacted] Personal Address / Ex. 6]
CC: Scott Verhines [scott@[redacted] Personal Address / Ex. 6]
Subject: RE: regarding study of oil/gas extraction wastewater

Hi Lela – Thanks for reaching out on the new EPA study. As we have just started, the only information available right now is what you read on the web page. We are in the process of reaching out to stakeholders to discuss produced water management, and would be happy to hear from you about your experience managing produced water, particularly with respect to new or emerging approaches. Should we schedule a time for a call so that you can tell us about the work you have been doing? If this sounds OK, I'll suggest some times that would work for the EPA team.

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel [redacted] Personal Phone / Ex. 6

From: Lela Hunt [mailto:LHunt@[redacted] Personal Address / Ex. 6]
Sent: Friday, May 11, 2018 11:55 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: Scott Verhines <scott@[redacted] Personal Address / Ex. 6>
Subject: regarding study of oil/gas extraction wastewater

Hi Jesse,
My name is Lela Hunt. I am reaching out to you from OEI now Stantec, an engineering firm in New Mexico.

I read the recent article, "[Study of Oil and Gas Extraction Wastewater Management](#)" and followed the link to your email address.

We wish to engage in some manner with your stakeholder conversations, as we represent clients in the New Mexico oil and gas industry. We are currently exploring new approaches to managing produced water in the New Mexico oil patch and have interest in your work. Is there any more public information available as to your research efforts? Is there a role for our participation or support for your research?

Thank you kindly,
Lela Hunt

Lela Hunt

[redacted] Personal Phone / Ex. 6

OEI now Stantec

[redacted] Personal Address / Ex. 6

OEI is now part of the Stantec Family.

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 8/2/2018 1:52:54 PM
To: Mark Wilson [mwilson@**Personal Address / Ex. 6**]
CC: 'Steve Coffee' [steve@**Personal Address / Ex. 6**]
Subject: RE: EPA Study of Produced Water Management

OK – I'll send an appointment for Monday. We can talk logistics for Oklahoma then as well.
Thanks

From: Mark Wilson [mailto:mwilson@**Personal Address / Ex. 6**]
Sent: Thursday, August 02, 2018 9:43 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: 'Steve Coffee' <steve@**Personal Address / Ex. 6**>
Subject: EPA Study of Produced Water Management

Jesse :

We have a conference in Midland Wednesday and Thursday of next week. I'm available for a call all day Monday and Tuesday morning. Let me know when you'd like to talk.

I would be interested in meeting in Oklahoma.

Mark Wilson

Personal Address / Ex. 6

Personal Phone / Ex. 6

From: Pritts, Jesse <Pritts.Jesse@epa.gov>
Sent: Thursday, August 2, 2018 8:32 AM
To: Mark Wilson <mwilson@**Personal Address / Ex. 6**>
Subject: RE: EPA Study of Produced Water Management

Sounds good Mark – here are some discussion topics we've been sharing that are of interest to us. It would be great if we could set up a call to talk about these, as well as the topics you identified below. How much lead time do you need to get a group together? We could have an intro call with just us next week, and then pull the larger group together later on. Just let me know dates that work once you know. Also, we will be in Oklahoma the week of August 20th. Just wanted to put that out there in case there was an opportunity to meet in person. We are planning at least one meeting with industry and one meeting with NGOs. We could have a discussion as part of one of those meetings, or a separate meeting, assuming you have members in Oklahoma or nearby that would want to travel to Oklahoma City to meet in person. Just let me know if this is of interest and we can see if logistics will work.

Thanks

Discussion topics:

1. Produced water management - pros/cons with the status quo.
2. Produced water management alternative options - technologies, availability, drivers, etc.
3. Current or future produced water management barriers to alternatives.
4. Concerns related to federal regulations that allow for the discharge of treated produced water to surface waters and/or to municipal wastewater treatment.
5. Challenges to permitting facilities that treat and discharge produced waters.

6. Appropriate level of treatment required for produced waters that will be discharged to surface waters and/or Publicly Owned Treatment Works (POTWs).
7. Existing state regulations/requirements that conflict with a different federal approaches to produced water management (e.g., water rights).

From: Mark Wilson [mailto:mwilson@] **Personal Address / Ex. 6**

Sent: Wednesday, August 01, 2018 5:13 PM

To: Pritts, Jesse <Pritts.Jesse@epa.gov>

Subject: EPA Study of Produced Water Management

Jesse :

I checked with our president and he's interested. He just said it would take some time to round up the right attendees. I would be glad to talk to you and whomever else would be interested prior to talking to a group of us. I'm pretty available.

Other questions that come to mind:

- 1) Are you addressing ownership of the produced water? Doesn't this vary from state to state, and the liability issues impair the ability to swap recycled produced water between operators?
- 2) Why is EPA revisiting POTW's as an outlet? Are you thinking of enhanced POTW's that are capable of addressing the organics and salinity of the PW?
- 3) What is "good enough quality" for discharge west of the 98th meridian? Is it worse (water quality) than east of the 98th meridian?
- 4) Is EPA considering the use of fresh water for fracking (that would be a good idea west of the 98th meridian)? They're recycling a good portion of produced water and flowback in the Marcellus area (some companies claim 100% of frac needs are met by reuse). It's making economic sense in the Permian as well.

I'm not expecting a written answer back to these questions. Just food for thought for when we talk.

Mark Wilson

Personal Address / Ex. 6

Personal Phone / Ex. 6

From: Pritts, Jesse <Pritts.Jesse@epa.gov>

Sent: Tuesday, July 31, 2018 2:10 PM

To: Mark Wilson <mwilson@] **Personal Address / Ex. 6** >

Subject: RE: EPA Study of Produced Water Management

Hi Mark –

Thanks for reaching out regarding EPA's produced water study. Below are answers to your questions. In addition, we would welcome a conversation about the Produced Water Society and what role your members could play in informing EPA on this important topic. Could we set up a conference call with the EPA team and some of your members? I can suggest some times that work for the EPA team.

Q: Do you have any more information that further explains the study announced on May 2nd? Is there a schedule established yet for study milestones?

A: The most up to date information about the study can be found on EPA's web page:

<https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>. Our current plans are to continue outreach through the summer. In October, we plan to hold a public meeting in Washington, DC to

report on what we have learned and to allow stakeholders to provide additional input to EPA. Following that, we plan to prepare a white paper that will likely be used by EPA's decisionmakers to determine next steps. This could include regulatory and/or non-regulatory approaches.

Q: On the EPA's web site that describes the study, "stakeholder" are referred to several times. Who are these stakeholders?

A: We have been reaching out to states, tribes, academia, industry, technology vendors and NGOs to learn about produced water generation, management and treatment. We welcome input from any interested party.

Q: The term "available approaches" to manage wastewater is also referred to. Are these "available approaches" delineated anywhere?

A: Some currently available approaches include reuse within the oil and gas sector, disposal (such as underground injection), and in limited cases discharge to surface waters or to publicly-owned treatment works (or POTWs). The white paper that we plan to prepare will describe information we collect on available approaches.

Q: And can you explain what is meant by "broader discharge" in this sentence included in the 3rd paragraph?

A: Currently, discharge of oil and gas wastewater from onshore oil and gas extraction facilities is limited under federal regulations at 40 CFR Part 435. These regulations specify no discharge of wastewater pollutants to surface waters except west of the 98th meridian when such wastewater is of good enough quality and is used for agriculture or wildlife propagation. In addition, off-site centralized waste treatment facilities can accept oil and gas extraction wastewater for treatment and discharge. These facilities are currently regulated under 40 CFR Part 437. A focus of the study is to consider whether allowing additional discharges of treated oil and gas wastewater to surface waters would be supported, and if so, to better understand any associated concerns.

Q: Since I wrote you last the EPA has signed an MOU with the State of New Mexico. Is the intent to sign more MOU's with more states? Are there target states (like TX, OK, PA, ND, SD, WY, OH, CA)?

A: As far as I know, no other states that have communicated a desire to do so to EPA.

Let me know if you have additional questions, and whether a call with EPA about the study would be beneficial.

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel. Personal Phone / Ex. 6

From: Mark Wilson [mailto:mwilson@Personal Address / Ex. 6]
Sent: Monday, July 30, 2018 2:33 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: EPA Study of Produced Water Management

Thanks Jesse.

Since I wrote you last the EPA has signed an MOU with the State of New Mexico. Is the intent to sign more MOU's with more states?

Are there target states (like TX, OK, PA, ND, SD, WY, OH, CA)?

Mark Wilson

Personal Address / Ex. 6

Personal Phone / Ex. 6

From: Pritts, Jesse <Pritts.Jesse@epa.gov>

Sent: Monday, July 30, 2018 12:23 PM

To: Mark Wilson <mwilson@**Personal Address / Ex. 6**>

Subject: RE: EPA Study of Produced Water Management

Hi Mark – my apologies for the delayed response, but I’ve been waiting on our press people (they have been very busy) to give me some guidance on responding to your questions. It may take a bit longer, but I would like to get back to you with answers to your questions. Thanks for your patience.

Regards,

Jesse W. Pritts, P.E.

United States Environmental Protection Agency

tel. **Personal Phone / Ex. 6**

From: Mark Wilson [mailto:mwilson@**Personal Address / Ex. 6**]

Sent: Monday, July 16, 2018 9:26 AM

To: Pritts, Jesse <Pritts.Jesse@epa.gov>

Subject: EPA Study of Produced Water Management

Jesse :

I am the editor of Water in Oil, a newsletter published by the Produced Water Society. We are an association focused on issues surrounding produced water.

Do you have any more information that further explains the study announced on May 2nd? Is there a schedule established yet for study milestones?

On the EPA’s web site that describes the study, “stakeholder” are referred to several times. Who are these stakeholders?

The term “available approaches” to manage wastewater is also referred to. Are these “available approaches” delineated anywhere?

And can you explain what is meant by “broader discharge” in this sentence included in the 3rd paragraph?

EPA’s study will address questions such as how existing federal approaches to produced water management under the Clean Water Act can interact more effectively with state and tribal regulations, requirements or policy needs, and whether potential federal regulations that may allow for broader discharge of treated produced water to surface waters are supported.st

Any details on the study would be appreciated. You can email me or call at your convenience.

Thanks.

Mark Wilson

Personal Address / Ex. 6

Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/13/2018 7:29:50 PM
To: Flanders, Phillip [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0cb247ef96f642f98cb727a9ed48e49e-Flanders, P]
Subject: oil and gas study update

Here's the current status of the oil and gas study. Let me know your thoughts on this:

The EPA is conducting a study evaluating management of produced water from oil and gas extraction activities under the Clean Water Act. The goal of the study is to understand if broader discharge of treated produced waters to Waters of the United States is supported. A key component of the study is to engage with stakeholders (including states, tribes, industry, academia and NGOs) to understand their experience and perspective on topics surrounding produced water management. The Agency conducted outreach with stakeholders from May through September, 2018 through a series of meetings and conference calls. The Agency held a public meeting in October, 2018 to report on what we learned. The Agency is currently drafting a white paper that can be used to inform next steps.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/3/2018 8:29:30 PM
To: Jan Matuszko [Matuszko.Jan@epa.gov]; Damico, Brian [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5293065367ab48c2bb2ebadcf992c0d6-BDamico]; Karen Milam (Milam.Karen@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]
Subject: FW: Web site
Attachments: Oil and Gas Web Page_040318KMM.docx; CWT web page.docx

Jan and Brian – here are suggested edits to the CWT and oil and gas web pages to address the new study (and other items). Let me know if you have any comments, and we can get them to Eric when he is back in the office.

Thanks

From: Milam, Karen
Sent: Tuesday, April 03, 2018 2:44 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Web site

Jesse,

CWT page looks great! I added some text for the UOG section of oil and gas webpage (thanks for letting me add in).

Deliberative Process / Ex. 5

Thanks!
Karen

From: Pritts, Jesse
Sent: Tuesday, April 03, 2018 1:36 PM
To: Milam, Karen <Milam.Karen@epa.gov>
Subject: FW: Web site

I'm looking at the oil and gas web site right now. Do you want to update anything, either on the main oil and gas page or the UOG page, about the PA effort as Jan suggested? If so, let me know and we'll combine. Also, here's what I suggest for the holistic study and the CWT web page.

From: Matuszko, Jan
Sent: Friday, March 23, 2018 3:32 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>; Siddiqui, Ahmar <Siddiqui.Ahmar@epa.gov>; Tripp, Anthony <Tripp.Anthony@epa.gov>; Milam, Karen <Milam.Karen@epa.gov>
Cc: Strassler, Eric <Strassler.Eric@epa.gov>; Damico, Brian <Damico.Brian@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>
Subject: Web site

When we publish the ELG plan, we are also going to need to revise some of the industry specific web sites.

Each of you in the to list received this because you are responsible for one or more of the projects that are changing status in the final 2016 plan. Please look at the industry specific web-site and provide suggested edits to Eric so that he can start to work those up.

Tony- Will need a couple of sentences or a paragraph talking about the detailed study. You can look at the petroleum refining and CWT sites to get an idea of what is needed.

Ahmar- Will need to say we completed our investigation and prepared a report that summarizes the info and then link to that report. I still owe you comments on that report.

Jesse- the main work is for you. CWT will need to have a pointer to the document that is a compilation of the data we have collected to date (not a study completion) and a link/pointer to holistic oil and gas study.

Then we will need something added to the oil and gas web site that talks about the holistic study.

Karen should probably add something to the oil and gas website on our effort regarding the PA facilities and UOG.

You all can look to the summary in the plan themselves if that helps.

Any questions, see Brian and/or Eric.

Would be great if we have drafts by 4/2.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 8/28/2018 6:38:50 PM
To: Dressel, Paul [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=aef6d8272fa04f66857fae05433ae915-Dressel, Paul]
Subject: RE: outreach with PA on oil and gas study

Hi Paul – I'm back from stakeholder meetings in Oklahoma, and I'm now working on arranging meetings in PA. Thought I'd fill you in on what's happened so far so we can brainstorm about who else to contact.

PA State Agencies: I've been in contact with some folks in PADEP (Dave Allard with the Bureau of Radiation Protection, Lee McDonnell with the Bureau of Clean Water, Scott Perry with the Office of Oil and Gas Management, and Walt Harner with the Bureau of Waste Management). They and staff working on produced water issues are available for a meeting with EPA on 9/26 at DEP headquarters in Harrisburg from 8:30 – Noon, so that has been scheduled. I have a contact at the PA DCNR (Kristin Carter, with the PA Geologic Survey) whom I will contact. *Are there any other PADEP offices, or other state agencies in PA that work on oil and gas issues that you know of that I should contact?*

Academia: I spoke with Nathaniel Warner at Penn State about arranging a meeting with academia, either in Harrisburg or in State College the week of 9/24. He and others at PSU are available. I will contact Radisav Vidic (at University of Pittsburgh, whom I know) about having researchers from Pitt participate. Nat also mentioned Meagan Mauter at Carnegie Mellon as someone to contact, so I will do that. *If there are others in academia working on produced water issues in Region 3 states that you know of to contact, please let me know.*

PA Crude Development Advisory Council: The PA CDAC wants to meet with us – currently working on getting that meeting scheduled.

Industry: I spoke with Mike Ward and David Clark with PGCC, and they would like to meet that week as well. We have not set a date yet. I need to identify contacts at other industry groups, including Pennsylvania Independent Petroleum Producers (PIPP) and Pennsylvania Independent Oil and Gas Association (PIOGA). *If you know of contacts at PIPP or PIOGA, or other industry groups representing oil and gas interests in PA, please let me know.*

Let me know if you've got ideas on any of these, and if you want to chat. Also, R3 would be welcome to attend any of the meetings we have, so keep that in mind.

Thanks

From: Dressel, Paul
Sent: Thursday, August 16, 2018 3:16 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: outreach with PA on oil and gas study

Jesse

I got your voicemail. I met with our EE workgroup on Tuesday.

I am still gathering information from the group. I have 2 state PADEP contacts

Seth Pelepko from the PADEP, Office of Oil and Gas Management and Ali Morris Tarquino from PADEP.

I understand that a local municipality reached out to you directly a few weeks back.

I will try to get you the complete list as soon as possible. I will be back in the office tomorrow

Paul G. Dressel, Deputy Director
US EPA, Region 3
Office of Enforcement, Compliance
and Environmental Justice

Personal Phone / Ex. 6

dressel.paul@epa.gov

From: Pritts, Jesse

Sent: Thursday, August 09, 2018 12:12 PM

To: Dressel, Paul <DRESSEL.PAUL@EPA.GOV>

Subject: outreach with PA on oil and gas study

Hi Paul – OW would like to conduct outreach with PA players in oil and gas produced water management for the national produced water study. Are you coordinating oil and gas activities for R3? We could use some help identifying stakeholders (state agencies, industry, NGOs, academia, etc.) that we should be engaging with and with some meeting logistics. We're thinking of a few in-person meetings in Philadelphia in September. Be great to talk to you, or others, about this effort and how R3 can support OW. Please let me know how best to proceed.

Thanks,

Jesse

=====

Jesse W. Pritts, P.E.

United States Environmental Protection Agency
Office of Water | Office of Science and Technology

tel: [Personal Phone / Ex. 6](tel:)

email: pritts.jesse@epa.gov

<https://www.epa.gov/eg>

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 10/16/2018 6:07:14 PM
To: Pfeiffer, Tricia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3c7cd189c22a4b5589feaf5ef4b254f3-Pfeiffer, Tricia]
CC: Clark, Amy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e65342fadadb43e3ac26a9426ab1f9d1-Clark, Amy]; Feret, Karen (Milam) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]; Jan Matuszko [Matuszko.Jan@epa.gov]; Kenney, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ce6ff86939e44da49d88840b2353f022-Kenney, James]
Subject: RE: docket

I created a new folder called "Docket Items" where you can upload any files we received that should be included in the docket for the study.

Thanks!

Oil and Gas Study Docket

From: Pfeiffer, Tricia
Sent: Tuesday, October 16, 2018 12:02 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: docket

Which file in SharePoint would you like presentations for the docket to be added to? I have electronic version from Nat and will scan the other materials if that is helpful. Let me know ☺

Tricia Pfeiffer | U.S. EPA Region 8 | 1595 Wynkoop St | Denver, CO 80202 | Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 6/4/2018 9:17:23 PM
To: Flanders, Phillip [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0cb247ef96f642f98cb727a9ed48e49e-Flanders, P]
Subject: RE: Quick Turnaround! OS briefing package
Attachments: Prelim 18 ELG Plan Briefing_053018 JP.docx

Hi Phillip – here's a couple sentences on the oil and gas study. Let me know if you need anything else.

From: Flanders, Phillip
Sent: Thursday, May 31, 2018 10:58 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>; Tripp, Anthony <Tripp.Anthony@epa.gov>; Lewis, Samantha <Lewis.Samantha@epa.gov>; Whitlock, Steve <Whitlock.Steve@epa.gov>
Cc: Damico, Brian <Damico.Brian@epa.gov>
Subject: Quick Turnaround! OS briefing package
Importance: High

I need some help with project status updates for the Options Selection briefing for the Preliminary 2018 ELG Plan. Please provide brief descriptions of your projects that would fit into this briefing. It is really only intended to give a status update to senior management. We are briefing Rob next week, so **please send me descriptions by Tuesday (6/5)**. We are aiming to have the Options Selection meeting with Dave Ross in July.

Thank you,


Phillip Flanders, Ph.D., P.E.

Environmental Engineer
Engineering and Analysis Division
Office of Science and Technology
Office of Water




Mail Code 4303T
(202) 566-8323
www.epa.gov/eg

Message


From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/11/2018 12:48:20 PM
To: Mordick, Briana [bmordick@
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Great! Let's do 3:30 eastern. I'll send an outlook invite. Feel free to forward to others. No worries about the Denver meeting – there will be additional opportunities.

From: Mordick, Briana [mailto:bmordick@
Sent: Thursday, May 10, 2018 7:21 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Thanks, Jesse. The 23rd would be best for us.

Yep, Sarah passed along the info to me and I reached out to Amy Clark to let her know that you and I have been communicating. Unfortunately I don't think anyone from NRDC will be available to attend the Denver meeting.

From: Pritts, Jesse [mailto:Pritts.Jesse@epa.gov]
Sent: Thursday, May 10, 2018 9:46 AM
To: Mordick, Briana <bmordick@
Subject: RE: Study of Oil and Gas Extraction Wastewater Management


Hi Briana –

Let's set up a call soon to discuss. Calendars are pretty tight the next few weeks, but here are some dates/times that the EPA team is available for an hour discussion:

Wednesday 5/16 @ 1 PM Eastern
Wednesday 5/23 between 2:30 PM and 4:30 PM Eastern
Thursday 6/7 @ 2 PM Eastern

FYI, EPA Region 8 is hosting some stakeholder meetings in Denver on May 21 and 22. They have contacted stakeholders that may be interested in attending, and that included Sarah Tallman at NRDC since there has been past interaction with Sarah regarding oil and gas activities in the region 8 states. Just wanted to let you know that is part of the same effort, and that we are all talking, in case you had heard of that meeting.

Thanks,
Jesse

From: Mordick, Briana [mailto:bmordick@
Sent: Wednesday, May 09, 2018 7:09 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Hi Jesse,
Thanks very much for the quick response. It would be great to set up a call to discuss individually, but we'd also be happy to participate in a group discussion as well, if that would be useful. Please let me know when you're available to talk.

Thanks,
Briana

From: Pritts, Jesse [mailto:Pritts.Jesse@epa.gov]
Sent: Wednesday, May 9, 2018 9:02 AM
To: Mordick, Briana <bmordick@epa.gov>
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Hi Briana – We are interested in produced water from onshore production, both conventional and unconventional extraction. Since we’ve just kicked off the study, we are interested in engaging with a variety of stakeholders to evaluate topics such as current management practices for these wastewaters, the availability and performance of treatment technologies, and how EPA’s Clean Water Act regulations address management of these wastewaters. If you haven’t seen our web page, a link is provided below.

Our plan is to conduct outreach for the next 5-6 months, and to have a completed report in about a year. I’d be happy to set up a time to discuss and get input from NRDC. We can have either conference calls or in-person meetings. We can also meet individually with NRDC, or we could set up a group discussion with other NGOs’ – just let me know your preference. I don’t currently have a listserve, but we can arrange to check-in periodically to provide updates if that works.

Thanks for reaching out, and I look forward to our discussions.

<https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel. [Personal Phone / Ex. 6]

From: Mordick, Briana [mailto:bmordick@epa.gov]
Sent: Wednesday, May 09, 2018 11:34 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Study of Oil and Gas Extraction Wastewater Management

Dear Mr. Pritts,

I’m writing to learn more about EPA’s recently announced study of regulation and management of wastewater from the oil and gas industry. Any additional information you can provide about the scope and timing of the study would be much appreciated. NRDC would also be very interested in being among the stakeholders contacted to discuss current wastewater management practices. Finally, is there an email listserv I can sign up for to receive updates and information?

Thanks in advance for your time,
Briana Mordick

BRIANA MORDICK
Senior Scientist
Nature and Climate & Clean Energy Programs

NATURAL RESOURCES
DEFENSE COUNCIL
[Personal Address / Ex. 6]

Personal Address / Ex. 6

T Personal Phone / Ex. 6

BMORDICK@
NRDC.ORG

Personal Address / Ex. 6

Please save paper.
Think before printing.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 10/11/2018 3:32:18 PM
To: Hair, Lisa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c9d8b06d38eb42788c3627036a9ce7b1-LHair]
Subject: RE: FYI Only: Water articles in the Press

Hi Lisa! Yes, we had a public meeting on Tuesday on this topic.

From: Hair, Lisa
Sent: Thursday, October 11, 2018 9:52 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: FW: FYI Only: Water articles in the Press

You've been busy.

From: Bravo, Antonio
Sent: Thursday, October 11, 2018 9:30 AM
To: OW-OWOW-EVERYONE <OWOWOWEVERYONE@epa.gov>
Subject: FYI Only: Water articles in the Press

Axcess News

Business News

EPA Investigating Ways to Repurpose Waste Water

The US Environmental Protection Agency announced in a press release that it is embarking on a large scale study to examine the wastewater management requirements and policies in the oil and gas industry. The

motivation behind this study is to look at where current practices fall short, and to formulate and release suggestions for new federal regulations going forward.

In the oil and gas industries, in particular, large amounts of wastewater are generated and these amounts are constantly increasing. Currently, while the most common method of disposing of this wastewater is by using a method called underground injection, this does not maximize the potential for recycling of the water. Underground injection wastes huge volumes of water when it could potentially be treated and repurposed.

“Dealing with wastewater from oil and gas extraction and turning it into useable water is not an easy matter, but it’s a critical issue we need to work through,” Deputy Assistant Administrator for Water Lee D. Forsgren noted.

The EPA decided to investigate waste water disposal methods at this time because new approaches and technologies have been created that are more efficient and which allow the water to be recycled. Being able to recycle waste water is especially important to and beneficial for dry regions where there are water shortages.

Jesse Pritts, an engineer in EPA’s water office and the leader of the study stated that numerous companies in the oil and gas industries have already voiced their interest in finding alternative ways to treat waste water which would allow for repurposing of the water.

In other industries, waste water is already routinely separated from solid waste, explains Roto-Rooter plumbing experts, in a process called sludge dewatering. Sludge Dewatering consists of separating solid and liquid waste for the most efficient and cost-effective disposal. The solid waste is referred to as sludge, and the dewatering process focuses on reducing the volume and weight to lower disposing costs. If the water separated from the

waste could then be treated and repurposed costs could drop even further while significant amounts of fresh water could be saved or used for other purposes.



EPA won't probe complaint over lead in water in Amherst schools

Entire Article: <https://www.gazettenet.com/Shutesbury-resident-remains-concerned-about-lead-contaminated-water-in-Amherst-schools-20781653>

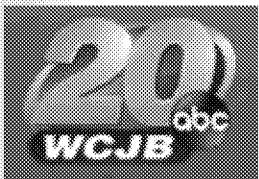
AMHERST — The Environmental Protection Agency's Office of the Inspector General is declining to pursue an investigation into a complaint from a Shutesbury resident that students in the Amherst public schools are needlessly being provided drinking water with elevated levels of lead.

In a recent email response to retired hydrogeologist Michael Hootstein, who filed the complaint in September, a representative from the Office of the Inspector General's hotline wrote, "Upon review of the information you provided, the EPA OIG has determined that it does not warrant further consideration and will close the matter. Thank you for your time and concern."

Hootstein, who has a grandchild at the Amherst Regional Middle School, argued that EPA Region 1 Drinking Water Chief Jane Downing and state Department of Environmental Protection Deputy Director Douglas Fine assisted Amherst-Pelham Schools Superintendent Michael Morris "to knowingly expose more than 2,600 district children to elevated lead in Amherst School drinking water each and every school day." This activity, Hootstein claims, is in violation of children's and parents' bodily integrity rights under the 14th Amendment of the U.S. Constitution, and in conflict with the state's felony poisoning statute.

Hootstein also has an active civil rights lawsuit, which he filed against the Amherst-Regional School Committee a year ago in U.S. District Court in Springfield. That seeks a series of immediate corrective steps, including installation of filtration systems and provision of bottled water to students. He said he intends to amend this lawsuit by seeking \$1 million in damages and to add the name of Morris, in his personal capacity as superintendent.

Morris said Wednesday that his comments from a year ago stand and that the district continues to maintain the lawsuit is without merit.



Congress approves massive water-projects bill

WASHINGTON DC — Congress has approved a sprawling bill to improve the nation's ports, dams and harbors, protect against floods, restore shorelines and support other water-related projects.

If signed by President Donald Trump, America's Water Infrastructure Act of 2018 would authorize more than \$6 billion in spending over 10 years for projects nationwide, including one to stem coastal erosion in Galveston, Texas, and restore wetlands damaged by Hurricane Harvey last year.

The bill also would help improve harbors in Seattle; Savannah, Georgia; and San Juan, Puerto Rico, and extend a federal program to improve drinking water quality in Flint, Michigan and other cities.

The bill also sets up a new framework for large water projects run by the U.S. Army Corps of Engineers. The changes are intended to increase local input and improve transparency.

The Senate approved the bill, 99-1, on Wednesday. Sen. Mike Lee, R-Utah, cast the lone dissenting vote. The House approved the bill last month on a voice vote.

Lawmakers from both parties hailed the measure, which they said will create jobs and help communities across the country fix irrigation systems, maintain dams and reduce flooding.

"America needs comprehensive water infrastructure legislation that will cut Washington red tape, create jobs and keep communities safe," said Sen. John Barrasso, R-Wyo., chairman of the Senate Environment and Public Works Committee.

The panel's top Democrat, Delaware Sen. Tom Carper, said the bill invests in critical infrastructure like dams and ports, expands federal efforts to prevent another water crisis similar to the one in Flint and helps coastal communities prepare for the growing risks of climate change.

Flint's tap water became contaminated in 2014 after officials switched from the Detroit system to the Flint River to save money, exposing many residents to lead, a potent neurotoxin. Some Flint children later were found with elevated blood lead levels, which can cause developmental delays and other health problems.

State and city officials say Flint's water is now safe to drink, but many residents remain skeptical. The Environmental Protection Agency says there is no safe level of lead.

The bill includes more than \$4 billion for the EPA's Drinking Water State Revolving Fund, which provides money to states and utilities to improve drinking water infrastructure.

The bill also would encourage operators of hydropower dams to invest in new infrastructure. The measure allows operators to receive federal "credit" for upgrades as they are completed, instead of waiting for a new license. Dam licenses can extend for 30 years or more.

"Giving our utilities the flexibility to better plan ahead will keep our energy sources safe and save taxpayers money," said Sen. Maria Cantwell, D-Wash.

Lee, the bill's lone named opponent, said it spends federal dollars on a series of local projects that should be funded and maintained by state and local governments.

"This bill is not the much-needed reform that national water infrastructure needs. Instead it is simple continuation of the failing status quo," he said.

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House, Senate leaders urge Trump to sign water infrastructure bill

October 10, 2018

House and Senate leaders are urging President Donald Trump to quickly sign bipartisan water infrastructure legislation that expands EPA's drinking water infrastructure program for the first time in 15 years and increases funding levels for a loan program for large drinking water and wastewater infrastructure projects.

The Senate voted 99-1 Oct. 10 to approve S. 3021, following the House's approval of the legislation by voice vote Sept. 13. Titled America's Water Infrastructure Act, the legislation includes authorization of Army Corps of Engineers water resources projects as well EPA-related provisions.

"We applaud the Senate for passing this vital legislation and urge President Trump to sign it into law soon," Reps. Greg Walden (R-OR), John Shimkus (R-IL) and Fred Upton (R-MI) said in an Oct. 10 statement. The lawmakers serve as the chairman of the Energy and Commerce Committee and two of its subcommittees.

Leaders of the Senate Environment and Public Works Committee (EPW) also praised the bill's passage, which sends the bill to Trump for his signature before it can become law.

"President Trump called on Congress to take action on the country's water infrastructure and we have done that today," EPW Chairman John Barrasso (R-WY) said in an Oct. 10 statement.

Both Barrasso and Sen. Thomas Carper (D-DE), the committee's ranking member, praised the bill's ability to create jobs.

"This is the first major infrastructure bill to clear this Congress, and it's one that should be celebrated," Carper said.

The House lawmakers called the infrastructure package "a win for America" and touted the reauthorization of EPA's drinking water infrastructure program to "ensur[e] our communities have safe, reliable drinking water available."

The bill authorizes funding for the drinking water state revolving fund (DWSRF) at \$125 million annually compared to \$100 million previously and includes a number of other changes to EPA's drinking water program. These include stronger requirements for notification of downstream water utilities when a chemical spill occurs; allowing Consumer Confidence Reports to be provided electronically rather than in the mail; increased funding for the Public Water System Supervision grants for state primacy agencies; an update to drinking water utility provisions in the Bioterrorism Act of 2002; and the creation of a competitive grant program to help drinking water systems increase the resilience of their infrastructure to natural hazards.

The bill also authorizes EPA's WaterSense voluntary water conservation program, encourages the use of asset management planning; calls for a study of best practices for administering the SRF program with an eye toward streamlining the program; and directs EPA to develop regulations that would allow states to require drinking water system owners or operators to assess options for consolidation or transfer of ownership if the utility is repeatedly out of compliance with SDWA.

Additionally, the legislation includes increased funding authorizations for the Water Infrastructure Finance & Innovation Act (WIFIA) program, at \$50 million in each fiscal years 2020 and 2021 and changes the status of WIFIA from a pilot to a permanent program.

Clean Water Act provisions include renewed authorization of \$225 million annually for the Combined Sewer Overflow grants program in both FY19 and FY20 and the creation of an EPA task force to study and provide recommendations on how to address stormwater funding and financing.

Supreme Court Urged To Resolve Circuit Split On CWA Groundwater Liability

October 09, 2018

The American Petroleum Institute (API) and the county of Maui, HI, are touting a pair of recent appeals court decisions that rejected Clean Water Act (CWA) liability for leaks into groundwater as a further reason for the Supreme Court to take up other cases on the subject, arguing that there is now a circuit split that only the justices can remedy.

API and Maui's new briefs in the two pending high court cases on CWA-groundwater liability say that even though they agree with the decisions by the U.S. Court of Appeals for the 6th Circuit, the wide gulf between that court's rulings and earlier decisions by the 4th and 9th Circuits that imposed CWA penalties for groundwater leaks underscores the need for a single nationwide decision on the subject.

"The Sixth Circuit's decisions confirm in many ways the need for this Court's prompt intervention. The Sixth Circuit is the third federal appeals court this calendar year to weigh in on the meaning of point source pollution under the CWA. And it has reached the third different interpretation of the statute," Maui says in an Oct. 5 "supplemental" brief supporting its pending high court petition, *Hawai'i Wildlife Fund, et al., v. County of Maui*.

The CWA does not directly regulate groundwater quality, but the 9th Circuit's *Maui* decision, as well as the 4th Circuit in *Upstate Forever, et al., v. Kinder Morgan Energy Partners*, agreed with environmentalists that pollution leaks into groundwater that flows directly into jurisdictional surface waters are violations of the law. The defendants in both of those cases, as well as various industry and conservative *amicus* parties, are now pressing the Supreme Court to step in and overturn the rulings.

Moreover, after those petitions were filed the 6th Circuit rejected the CWA-groundwater theory in a pair of Sept. 24 decisions, creating a circuit split that Maui and its allies are now invoking to boost the odds that the high court will accept at least one of the two cases and set a new nationwide precedent.

In particular, Maui uses its new brief to highlight the fact that the 9th and 4th Circuits set different tests for when a groundwater leak should be subject to the CWA, arguing that there is actually a three-way split among the courts.

"The Ninth Circuit below concluded that point source pollution under the CWA broadly reaches pollution that is 'fairly traceable' to a point source and reaches navigable waters in more than *de minimis* amounts. The Fourth Circuit similarly expanded the concept of point source pollution, but adopted a test expressly rejected by the Ninth Circuit," based on a "direct hydrological connection" between groundwater and surface waters, Maui says in its brief.

API and pipeline groups' Oct. 4 brief supporting *cert* in the *Upstate Forever* case focuses on the 4th Circuit's test, which it says is now in direct conflict with the 6th Circuit's reasoning.

“[T]he Sixth Circuit has since explicitly rejected the 'hydrological connection theory' as having no support 'in either the text or the history of the CWA and related environmental laws,' thereby solidifying the circuit split,” API says.

Supreme Court Precedent

Both new briefs also focus on the lower courts' conflicting interpretations of the Supreme Court's past decisions on the CWA's reach, most recently *Rapanos, et ux., et al., v. United States* -- which the 4th, 6th, and 9th Circuit panels all cited in support of their conflicting decisions on groundwater.

The *Kinder Morgan* ruling currently applies in the 4th Circuit states of Maryland, North Carolina, South Carolina, Virginia and West Virginia. The *Maui* ruling governs groundwater liability in 9th Circuit states of Alaska, Arizona, California, Hawaii, Idaho, Montana, Nevada, Oregon and Washington. Finally, the 6th circuit's precedent applies within its borders, which cover Kentucky, Michigan, Ohio and Tennessee.

In particular, the judges are at odds over the meaning of a passage in the late Justice Antonin Scalia's plurality *Rapanos* opinion where he wrote that “[t]he Act does not forbid the ‘addition of any pollutant directly to navigable waters from any point source,’ but rather the ‘addition of any pollutant to navigable waters.’”

The *Maui* and *Upstate Forever* courts said that language shows that a pollution release that starts at a “point source” and takes an indirect path to surface waters is still subject to the law.

But the 6th Circuit majority in *Tennessee Clean Water Network, et al., v. Tennessee Valley Authority and Kentucky Waterways Alliance (KWA), et al., v. Kentucky Utilities Co.* -- which were decided by the same panel of judges -- said it only refers to releases that travel through a series of point sources, as opposed to nonpoint sources like groundwater.

“[T]he Sixth Circuit’s discussion of *Rapanos* shows clearly that the conflict in authority can only be resolved by this Court. As the Sixth Circuit recognized, both the Ninth and Fourth Circuits claim to find effectively controlling support for their rulings in Justice Scalia’s opinion in *Rapanos*. That is a mistaken reading of the opinion, but also one that only this Court can definitively settle,” Maui writes. -- *David LaRoss* (dlaross@iwpnews.com)

Class action suit seeks nationwide PFAS health studies

October 09, 2018

A class action suit brought Oct. 4 against the manufacturers of per- and polyfluoroalkyl substances (PFAS) is seeking industry-funded, independent nationwide health studies and testing to determine health effects caused by multiple PFAS -- including the newer replacement chemicals -- found in the blood of nearly all Americans. The suit, brought by an Ohio firefighter but representing all residents of the United States with a detectable level of PFAS in their blood, was filed against industry chemical giants 3M Company, E.I. DuPont de Nemours & Co., the Chemours Company as well as eight other manufacturers of the chemicals. Such a class could be huge, as the suit says testing by independent researchers and defendants has found that 99 percent of the U.S. population has PFAS in their blood.

Kevin D. Hardwick v. 3M Company, et al. was filed in the U.S. District Court for the Southern District of Ohio. The Intercept first reported the litigation, saying it is targeting “the entire class of PFAS chemicals,” including newer chemicals such as GenX.

PFAS, used in a host of consumer and industrial applications including in firefighting foam, is a class of thousands of emerging contaminants that is increasingly drawing concerns due to its presence in drinking water systems.

The suit aims to build on findings from an independent C8 science panel created as part of an earlier settlement between DuPont and citizens, which considered the impact of one PFAS -- perfluorooctanoic acid (PFOA) -- in West Virginia and Ohio, tying the chemical to testicular cancer, kidney cancer, ulcerative colitis, thyroid disease, preeclampsia and medically-diagnosed high cholesterol, according to attorney Rob Bilott in an Oct. 4 press release from his law firm Taft Stettinius & Hollister LLP. The attorney, who is representing the class in this case as well, successfully brought the C8 science panel litigation several years ago.

In that case, Bilott, who has long pushed EPA to address the threat of drinking water contaminated with PFAS, represented a class of approximately 70,000 plaintiffs whose drinking water supplies in West Virginia and Ohio had been contaminated with PFOA, also known as C8, from a manufacturing plant then-owned by DuPont. The settlement led to blood testing of approximately 69,000 people and the creation of the independent C8 science

panel to confirm which diseases were linked to PFOA exposure, as well as treatment of the contaminated water and medical monitoring of the class for each disease linked to the chemical.

“With multiple PFAS chemicals now contaminating the blood of people all over this country, it should be possible to build upon and expand the C8 Science Panel model to encompass a comprehensive, nationwide investigation of the impact of multiple PFAS chemicals,” Bilott says in the release.

The class action suit is seeking injunctive, equitable and declaratory relief for injuries to class members arising from alleged intentional, reckless and negligent acts by defendants in connection with the contamination of class members' blood from a variety of PFAS -- both older, long-chain versions as well as GenX and other newer, shorter-chain chemicals in the class. The suit specifically seeks an injunction requiring the defendants to fund a PFAS science panel, while alleging negligence, battery, and conspiracy by the defendants.

The suit alleges the defendants are effectively using class members “as part of a massive, undisclosed human health experiment” without their knowledge or consent, and are denying the class any right to stop the PFAS exposures unless they can prove at their own cost such exposures resulted in a serious disease or killed them.

“[T]here is tremendous fear, anxiety, and uncertainty across the country as to the serious public health threat posed by PFAS contamination,” Bilott says in the release. “This lawsuit could provide a mechanism for addressing and resolving those concerns through a truly comprehensive and independent, science-based process paid for by those that actually created the problem -- and not by the American taxpayers.”



EPA starts oil, gas wastewater management study amid complexities

Entire Article: <https://www.ogj.com/articles/2018/10/epa-starts-oil-gas-wastewater-management-study-amid-complexities.html>

The US Environmental Protection Agency is studying oil and gas wastewater management requirements and policies with the intention of producing a white paper early in 2019 that will help it determine if new federal regulations are necessary, officials said Oct. 9. They also acknowledged that it will be difficult.

“Dealing with wastewater from oil and gas extraction and turning it into useable water is not an easy matter, but it’s a critical issue we need to work through,” Deputy Assistant Administrator for Water Lee D. Forsgren observed at a public meeting at EPA’s headquarters.

EPA’s exploration and production effluent guidelines apply onshore at the wellhead and at centralized wastewater treatment sites, noted Jesse Pritts, an engineer in EPA’s water office and the study’s leader. Control measures include establishing and enforcing limits, using best management practices, and determining effective wastewater management techniques, he said.

Stripper wells, coalbed methane production, and discharges for beneficial reuse are exempt, Pritts said. “We have no regulations for reuse of water in the oil field or its disposal in Class II underwater injection control wells,” he said.

EPA undertook the study because new wastewater management approaches are emerging, and possible uses for treated production waste are emerging, suggesting they could be used in parts of the US where fresh surface water is

scarce, Pritts said. One goal is to understand if broad support exists for potentially allowing broader wastewater discharges, he said.

"Some states support additional discharge options to add water to the hydrological cycle and reduce demand for freshwater," Pritts said. EPA contacted several officials who cited possible reduced regulatory enforcement costs if existing management options are substantial, he said. "They said they could use more data, and lack technical expertise which leads them to rely heavily on EPA."

POLITICO*Pro*

THE WORD ON WRDA

The Senate will vote today on a big water resources bill, [S. 3021 \(115\)](#) — the advancement of which would be "another major victory for American infrastructure," Majority Leader [Mitch McConnell](#) said on the floor this week. Senators voted 96-3 on Tuesday to limit debate on the America's Water Infrastructure Act, Pro's Anthony Adragna [reports](#), setting up a final vote this morning at 11:30 a.m. The bill reauthorizes the Safe Drinking Water Act for the first time in two decades, but also delivers several local lawmaker priorities, including on a reservoir key to stanching algae blooms in Florida's Lake Okeechobee. The president also [took to Twitter](#) on Tuesday about funding to "fix the algae problem," saying Sen. [Bill Nelson](#) "has been no help!" President Donald Trump praised Gov. Rick Scott, who is challenging Nelson, for being "relentless in securing the funding."

INSIDEEPA.COM

an online news service from the publishers of Inside EPA

EPA Faces Call to Include OLEM In 2019 Oil & Gas Wastewater Rule Decision

Entire Article: [https://insideepa.com/daily-news/epa-faces-call-include-olem-](https://insideepa.com/daily-news/epa-faces-call-include-olem-2019-oil-gas-wastewater-rule-decision)

[2019-oil-gas-wastewater-rule-decision](#)

EPA's Office of Water (OW) plans to make a decision by the middle of next year on whether to amend its effluent rules for onshore oil and gas extraction to allow for increased discharge options, but environmentalists fear OW's decision may fail to coordinate with an upcoming waste office decision about the sector.

Addressing the questions of how to best manage both conventional and unconventional oil and gas extraction wastewater from onshore facilities, including maximizing the use of produced water in arid regions while facilitating energy production, is part of the Trump administration's priority to increase domestic energy production, Lee Forsgren, deputy assistant administrator for water, told participants at an Oct. 9 public meeting in Washington, D.C.

"We know the issues aren't easy," he said.

Based on feedback from the public meeting and other discussions with stakeholders, the agency plans to develop by early 2019 a white paper discussing policy options, Forsgren said. EPA plans to gather additional input on the white paper, although the agency has not yet decided whether it will be through formal notice and comment, he said. And then by next summer, EPA will make a decision about regulation, he said.

Alison Kelly, an attorney with the Natural Resources Defense Council (NRDC), urged EPA to conduct a formal notice-and-comment process.

And Aaron Mintzes, senior policy counsel at Earthworks, asked water office officials whether they were coordinating with the Office of Land and Emergency Management (OLEM).

“Where is OLEM? They need to be at this table,” he said, noting that a 2016 consent decree requires the waste office by March 15 to either propose revisions to Resource Conservation and Recovery Act subtitle D criteria regulations pertaining to oil and gas wastes or sign a determination that revision of the regulations is not necessary following notice-and-comment rulemaking.

Forsgren and other EPA staff did not respond to any of the public comments, with Forsgren saying the agency was in listening mode.

EPA announced earlier this year, as part of the final 2016 effluent limitation guidelines (ELG) plan, that it was engaging with stakeholders to discuss the issues of oil and gas wastewater. While the agency has existing ELGs for oil and gas extraction and for centralized waste treatment (CWT), which is used to treat some produced water, it has not previously explored the issue holistically.

The agency notes that the volume of produced water nationally is increasing while the availability of underground injection wells for disposal in some areas is becoming limited and there is a growing call in the arid West to view produced water as a resource rather than a waste.

Produced water includes naturally occurring water that is trapped in rock formations and brought to the surface as a byproduct of oil and gas production as well as the intentional injection of water into a reservoir to aid in the energy recovery process.

Breaking Energy: Weighing In On EPA’s Wastewater Study

<https://breakingenergy.com/2018/10/10/weighing-in-on-epas-wastewater-study/>

By ENERGY TOMORROW BLOG- on October 10, 2018 at 10:00 AM

EPA held a public hearing on its Study of Oil and Gas Extraction Wastewater Management and heard a number of comments. These include those from operators and trade associations representing industry nationally and in states with high levels of oil and natural gas production – all supporting safe, responsible onshore development using innovative solutions that protect water. A sampling:

Amy Emmert, API senior policy advisor: “Before consideration of any rulemaking, there should be additional discussion of specific regulatory possibilities to avoid unintended consequences. At the federal level, produced water should be treated like any other category of industrial effluent. Science and technology-based effluent criteria should be established that allow discharges that are protective of environment. States should continue to be the primary implementation authority for produced water discharges similar to other industrial categories. The regulatory framework demonstrates that water can be managed safely and effectively. The oil and natural gas industry is committed to the reuse of water within our operations to offset water needs and reduce disposal, where practical.”

Bruce Thompson, American Exploration & Production Council president: “We want regulation that reflects the importance of conserving water resources, rather than incentivizing their disposal. AXPC members are looking for pathways for increased regulatory options that protect receiving waters and replace unnecessary restrictions with clear and consistent standards that provide regulatory certainty and aid industry decision-making and foster innovation. We believe that resource protection need not come at the expense of conservation – particularly given that water availability concerns are no longer confined to the ‘arid West’.” See online testimony.t

Lee Fuller, IPAA executive vice president: "Treated wastewater from oil and natural gas production could be an important and environmentally beneficial addition to America's water supply. States are the primary managers of water assets within their boundaries. EPA is opening an assessment of the potential for expanding these assets with treated oil and natural gas wastewater. EPA has the opportunity to provide states the options they need to improve their water assets. IPAA believes that the federal regulators should provide the framework that the states need."

John Robitaille, Petroleum Association of Wyoming vice president: Wyoming's produced water is "water that works" – from the point of discharge and along its entire flowpath. The effluent from these facilities permitted under Subcategory E is entirely consumed in this arid environment, is crucial to many agricultural operations, and has created very significant wildlife habitat. For example, consider the beneficial use of produced water documented by just one of our members (Merit Energy Company) where their fresh produced water discharges (with TDS as low as 600 mg/L) have been subjected to water right filings for irrigation and stock watering and have resulted in over 140 miles of perennial streams across an otherwise arid landscape, the creation of 876 acres of wetlands, 3,946 acres of riparian habitat, and sustains nearly 785 acres of lacustrine habitat.

David Clark, Pennsylvania Grade Crude Oil Coalition president: "USEPA should foster flexibility between federal and state regulators, recognizing that many environmental issues require regional solutions. Pennsylvania has extensive regulations for both conventional and unconventional operators within a comprehensive framework of environmental laws. USEPA's abrogation of this necessary state distinction under its UOG Rule is at odds with cooperative federalism and respect for differences necessitated by local factors. Federal rulemaking is often a blunt instrument that should be exercised with restraint."

John Tintera, Texas Alliance of Energy Producers president: "The Texas Alliance of Energy Producers recognizes the best place to regulate oil field produced water is at the state level. Texas already has a vibrant recycling industry with strong state regulatory oversight. Texas also has more resources to permit, inspect, and ensure compliance than federal agencies. In the spirit of cooperative federalism, we encourage a review and updating of federal NPDES permitting as well as delegation of that authority to the State.

Washington Post: The Energy 202: Iowans were hit hard by tariffs. Trump's new ethanol policy may help Republicans in the midterms.

https://www.washingtonpost.com/news/powerpost/paloma/the-energy-202/2018/10/10/the-energy-202-iowans-were-hit-hard-by-tariffs-trump-s-new-ethanol-policy-may-help-republicans-in-the-midterms/5bbcf44e1b326b7c8a8d18e2/?utm_term=.c31b7a71f495

By Dino Grandoni- October 10 at 8:49 AM

President Trump announced his plan to lift a ban on summer sales of gasoline blended with 15 percent ethanol, to increase ethanol use in the nation's gas pool. (Reuters)

Iowa is one of the states hardest hit by President Trump's burgeoning trade war with China. The nation's corn-growing capital will also be home to a handful of tight races this November that could help determine not only the makeup of the House next year but for years to come.

So less than a month before Election Day, Trump traveled to southwest Iowa on Tuesday to try and bolster his and his party's fortunes there in November and beyond. He came to stump for Midwestern Republicans armed with a pledge to make good on a campaign promise poised to boost demand for corn grown by Iowa farmers worried recently about diminished trade with the huge Chinese market.

During a rally in Council Bluffs, Trump formally announced that he is directing the Environmental Protection Agency to allow for the year-round sale of gasoline containing a high blend of corn-based ethanol. Currently, gas stations are not permitted to sell that fuel mixture during the peak summertime driving season.

"My administration is protecting ethanol," Trump told a crowd of supporters, many wearing green-and-yellow "Make Farmers Great Again" hats.

Before Trump left on Air Force One, elected officials from Midwestern states gathered at the White House on Tuesday afternoon to be briefed on what one attendee, Sen. Charles E. Grassley (R-Iowa), called afterward a "very good victory for agriculture."

The ethanol industry, now able to check off an item long on their wish list, echoed that sentiment. "This is a big day for us," said Geoff Cooper, head of the Renewable Fuels Association. "This announcement is something we've been waiting on for really a few years now."

Trump came to make his pitch for a series of Republican candidates running in tight races in Iowa. One of the Iowa Republicans whom Trump invited to speak on stage was Rep. David Young, who is in the midst of a tough reelection against Democrat Cindy Axne in Iowa's 3rd congressional district. The race is close, with the Cook Political Report rating it as a toss-up, since the district encompasses much of the Iowa Democratic Party's traditional stronghold of Des Moines, the state's biggest city. Also tight is the Iowa gubernatorial race, with incumbent Republican Gov. Kim Reynolds being edged out slightly by Democrat Fred Hubbell in recent polls. The state's next governor will play a role in shaping of Iowa's congressional districts after the 2020 Census.

Trump tried to drive a wedge between Republicans and Democrats on the issue of supporting government requirements that call for a certain portion of the nation's gasoline supply to contain the corn-based fuel. "The Dems will end ethanol," Trump told Iowans on Tuesday.

But the issue breaks down much more along geographic rather than partisan lines, with both Midwestern Republicans and Democrats supporting the ethanol mandates. "I'm pleased that the Administration is finally making good on its promise," Axne said in a statement, "but our farmers are still suffering from President Trump's unnecessary tariffs."

Indeed, with its many soybean, pork and corn producers, Iowa's farming sector is poised to be hit especially hard by retaliatory tariffs from China, Canada and elsewhere. GOP strategists are worried about the trade war initiated by Trump turning some farmers off to the party.

Instead, the ethanol issue divides Congress between representatives from corn-growing states like Iowa and oil-producing states like Texas. The petroleum industry and its allies regard the renewable fuel standards as an unnecessary burden on refiners and argue gasoline containing more ethanol will wear down car engines more quickly.

"I'm concerned consumers will pay more over time because of wear and tear on their vehicles and I believe that increased use of ethanol can contribute to more pollution during the summer months," Rep. Gene Green (D-Tex.) said in a statement.

That regional cleavage put Trump's former EPA administrator Scott Pruitt, an Oklahoman, and Iowa's senators at loggerheads earlier this year after Pruitt proposed rewriting renewable-fuel rules. Grassley accused Pruitt of breaking Trump's promise during the 2016 GOP presidential primary to support ethanol.

Now with Pruitt gone after a series of spending and managing problems and Andrew Wheeler installed as acting administrator, Grassley suggested the EPA is running more in line with Trump's campaign pledge.

"We've got Wheeler at the head of the EPA. I think that's a big help," Grassley told reporters Tuesday. "Wheeler's approach has been much more satisfying to me than Pruitt."

Chemical Watch: Trump taps former industry executive for EPA's science arm

<https://chemicalwatch.com/70929/trump-taps-former-industry-executive-for-epas-science-arm>

Lisa Martine Jenkins- 10 October 2018

After a number of recent cutbacks to US EPA departments, President Trump has named David Dunlap deputy assistant administrator for the Office of Research and Development. The ORD is the research arm of the agency, tasked with providing the science to underpin its work.

A chemical engineer, Mr Dunlap served as the director of environmental affairs for Koch Industries. He worked for the company from 2010 until recently. Koch is the second-largest privately held corporation in the US, and makes and refines chemicals, petroleum, fertilisers and plastics.

"Mr Dunlap has worked on environmental issues for nearly 30 years with a focus on assessing risk," said EPA chief of staff Ryan Jackson. "His extensive experience on regulatory issues will be pivotal in our mission to protect human health and the environment."

The ORD is one of the EPA's 12 central offices. The National Center for Computational Toxicology and the Chemical Safety for Sustainability programme are included within its purview.

Mr Dunlap's appointment comes just weeks after the EPA announced plans to shut down the Office of the Science Adviser, which "provides leadership on science and technology issues and policy". The outgoing science adviser, Dr Jennifer Orme-Zavaleta, is an expert on the risks of chemicals to human health.

Reports have also indicated that the EPA placed the director of its Office of Children's Health Protection, Dr Ruth Etzel, on administrative leave in September.

NGO the Environmental Working Group (EWG) has criticised the appointment of Mr Dunlap, calling him "a longtime chemical and fossil fuel industry executive". The group's president Ken Cook said: "This dumping down of the agency that is supposed to use science to protect Americans from toxic pollution is irresponsible, and will have real consequences for public health."

Mr Dunlap replaces Richard Yamada – a mathematician and former congressional committee staffer – who left after 15 months in the post in mid September. No explanation was given for his departure.

Dr Yamada's name came up in May in leaked internal documents that showed concern that draft toxicological profiles for four PFASs from a separate federal agency could result in a "public relations nightmare". Four House of Representatives Democrats later asked questions about a January meeting he had had with the American Chemistry Council (ACC).

Antonio Bravo
Office of Wetlands, Oceans & Watersheds
202-566-1976

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 8/2/2018 1:31:51 PM
To: Mark Wilson [mwilson@**Personal Address / Ex. 6**]
Subject: RE: EPA Study of Produced Water Management

Sounds good Mark – here are some discussion topics we’ve been sharing that are of interest to us. It would be great if we could set up a call to talk about these, as well as the topics you identified below. How much lead time do you need to get a group together? We could have an intro call with just us next week, and then pull the larger group together later on. Just let me know dates that work once you know. Also, we will be in Oklahoma the week of August 20th. Just wanted to put that out there in case there was an opportunity to meet in person. We are planning at least one meeting with industry and one meeting with NGOs. We could have a discussion as part of one of those meetings, or a separate meeting, assuming you have members in Oklahoma or nearby that would want to travel to Oklahoma City to meet in person. Just let me know if this is of interest and we can see if logistics will work.

Thanks

Discussion topics:

1. Produced water management - pros/cons with the status quo.
2. Produced water management alternative options - technologies, availability, drivers, etc.
3. Current or future produced water management barriers to alternatives.
4. Concerns related to federal regulations that allow for the discharge of treated produced water to surface waters and/or to municipal wastewater treatment.
5. Challenges to permitting facilities that treat and discharge produced waters.
6. Appropriate level of treatment required for produced waters that will be discharged to surface waters and/or Publicly Owned Treatment Works (POTWs).
7. Existing state regulations/requirements that conflict with a different federal approaches to produced water management (e.g., water rights).

From: Mark Wilson [mailto:mwilson@**Personal Address / Ex. 6**]
Sent: Wednesday, August 01, 2018 5:13 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: EPA Study of Produced Water Management

Jesse :

I checked with our president and he’s interested. He just said it would take some time to round up the right attendees. I would be glad to talk to you and whomever else would be interested prior to talking to a group of us. I’m pretty available.

Other questions that come to mind:

- 1) Are you addressing ownership of the produced water? Doesn’t this vary from state to state, and the liability issues impair the ability to swap recycled produced water between operators?
- 2) Why is EPA revisiting POTW’s as an outlet? Are you thinking of enhanced POTW’s that are capable of addressing the organics and salinity of the PW?
- 3) What is “good enough quality” for discharge west of the 98th meridian? Is it worse (water quality) than east of the 98th meridian?
- 4) Is EPA considering the use of fresh water for fracking (that would be a good idea west of the 98th meridian)? They’re recycling a good portion of produced water and flowback in the Marcellus area

(some companies claim 100% of frac needs are met by reuse). It's making economic sense in the Permian as well.

I'm not expecting a written answer back to these questions. Just food for thought for when we talk.

Mark Wilson

Personal Address / Ex. 6

Personal Phone / Ex. 6

From: Pritts, Jesse <Pritts.Jesse@epa.gov>

Sent: Tuesday, July 31, 2018 2:10 PM

To: Mark Wilson <mwilson@**Personal Address / Ex. 6**>

Subject: RE: EPA Study of Produced Water Management

Hi Mark –

Thanks for reaching out regarding EPA's produced water study. Below are answers to your questions. In addition, we would welcome a conversation about the Produced Water Society and what role your members could play in informing EPA on this important topic. Could we set up a conference call with the EPA team and some of your members? I can suggest some times that work for the EPA team.

Q: Do you have any more information that further explains the study announced on May 2nd? Is there a schedule established yet for study milestones?

A: The most up to date information about the study can be found on EPA's web page: <https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>. Our current plans are to continue outreach through the summer. In October, we plan to hold a public meeting in Washington, DC to report on what we have learned and to allow stakeholders to provide additional input to EPA. Following that, we plan to prepare a white paper that will likely be used by EPA's decisionmakers to determine next steps. This could include regulatory and/or non-regulatory approaches.

Q: On the EPA's web site that describes the study, "stakeholder" are referred to several times. Who are these stakeholders?

A: We have been reaching out to states, tribes, academia, industry, technology vendors and NGOs to learn about produced water generation, management and treatment. We welcome input from any interested party.

Q: The term "available approaches" to manage wastewater is also referred to. Are these "available approaches" delineated anywhere?

A: Some currently available approaches include reuse within the oil and gas sector, disposal (such as underground injection), and in limited cases discharge to surface waters or to publicly-owned treatment works (or POTWs). The white paper that we plan to prepare will describe information we collect on available approaches.

Q: And can you explain what is meant by "broader discharge" in this sentence included in the 3rd paragraph?

A: Currently, discharge of oil and gas wastewater from onshore oil and gas extraction facilities is limited under federal regulations at 40 CFR Part 435. These regulations specify no discharge of wastewater pollutants to surface waters except west of the 98th meridian when such wastewater is of good enough quality and is used

for agriculture or wildlife propagation. In addition, off-site centralized waste treatment facilities can accept oil and gas extraction wastewater for treatment and discharge. These facilities are currently regulated under 40 CFR Part 437. A focus of the study is to consider whether allowing additional discharges of treated oil and gas wastewater to surface waters would be supported, and if so, to better understand any associated concerns.

Q. Since I wrote you last the EPA has signed an MOU with the State of New Mexico. Is the intent to sign more MOU's with more states? Are there target states (like TX, OK, PA, ND, SD, WY, OH, CA)?

A. As far as I know, no other states that have communicated a desire to do so to EPA.

Let me know if you have additional questions, and whether a call with EPA about the study would be beneficial.

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel. Personal Phone / Ex. 6

From: Mark Wilson [mailto:mwilson@Personal Address / Ex. 6]
Sent: Monday, July 30, 2018 2:33 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: EPA Study of Produced Water Management

Thanks Jesse.

Since I wrote you last the EPA has signed an MOU with the State of New Mexico. Is the intent to sign more MOU's with more states?
Are there target states (like TX, OK, PA, ND, SD, WY, OH, CA)?

Mark Wilson
Personal Address / Ex. 6
Personal Phone / Ex. 6

From: Pritts, Jesse <Pritts.Jesse@epa.gov>
Sent: Monday, July 30, 2018 12:23 PM
To: Mark Wilson <mwilson@Personal Address / Ex. 6>
Subject: RE: EPA Study of Produced Water Management

Hi Mark – my apologies for the delayed response, but I've been waiting on our press people (they have been very busy) to give me some guidance on responding to your questions. It may take a bit longer, but I would like to get back to you with answers to your questions. Thanks for your patience.

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel. Personal Phone / Ex. 6

From: Mark Wilson [mailto:mwilson@Personal Address / Ex. 6]
Sent: Monday, July 16, 2018 9:26 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: EPA Study of Produced Water Management

Jesse :

I am the editor of Water in Oil, a newsletter published by the Produced Water Society. We are an association focused on issues surrounding produced water.

Do you have any more information that further explains the study announced on May 2nd? Is there a schedule established yet for study milestones?

On the EPA's web site that describes the study, "stakeholder" are referred to several times. Who are these stakeholders?

The term "available approaches" to manage wastewater is also referred to. Are these "available approaches" delineated anywhere?

And can you explain what is meant by "broader discharge" in this sentence included in the 3rd paragraph?

EPA's study will address questions such as how existing federal approaches to produced water management under the Clean Water Act can interact more effectively with state and tribal regulations, requirements or policy needs, and whether potential federal regulations that may allow for broader discharge of treated produced water to surface waters are supported.st

Any details on the study would be appreciated. You can email me or call at your convenience.

Thanks.

Mark Wilson

Personal Address / Ex. 6

Personal Phone / Ex. 6

Appointment

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/13/2018 12:58:52 PM
To: Forsgren, Lee [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a055d7329d5b470fbaa9920ce1b68a7d-Forsgren, D]
Subject: Accepted: Oil and Gas Wastewater Study Public Meeting
Location: 3219B WJCE Call in 202-991-0477 passcode 9726267

Start: 9/17/2018 6:00:00 PM
End: 9/17/2018 6:30:00 PM
Show Time As: Busy

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/10/2018 4:55:32 PM
To: Elliott, Ross [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33cb08013cc94c21a3e3236dbad4c4a4-REELLIOT]
Subject: oil and gas study

Hi Ross – I'd like to get some time for us to catch up on each other's oil and gas related activities. If you can let me know who on your end to include, I'll get something on the calendar.

Thanks

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/3/2018 5:35:45 PM
To: Karen Milam (Milam.Karen@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]
Subject: FW: Web site
Attachments: Oil and Gas Web Page.docx; CWT web page.docx

I'm looking at the oil and gas web site right now. Do you want to update anything, either on the main oil and gas page or the UOG page, about the PA effort as Jan suggested? If so, let me know and we'll combine. Also, here's what I suggest for the holistic study and the CWT web page.

From: Matuszko, Jan
Sent: Friday, March 23, 2018 3:32 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>; Siddiqui, Ahmar <Siddiqui.Ahmar@epa.gov>; Tripp, Anthony <Tripp.Anthony@epa.gov>; Milam, Karen <Milam.Karen@epa.gov>
Cc: Strassler, Eric <Strassler.Eric@epa.gov>; Damico, Brian <Damico.Brian@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>
Subject: Web site

When we publish the ELG plan, we are also going to need to revise some of the industry specific web sites.

Each of you in the to list received this because you are responsible for one or more of the projects that are changing status in the final 2016 plan. Please look at the industry specific web-site and provide suggested edits to Eric so that he can start to work those up.

Tony- Will need a couple of sentences or a paragraph talking about the detailed study. You can look at the petroleum refining and CWT sites to get an idea of what is needed.

Ahmar- Will need to say we completed our investigation and prepared a report that summarizes the info and then link to that report. I still owe you comments on that report.

Jesse- the main work is for you. CWT will need to have a pointer to the document that is a compilation of the data we have collected to date (not a study completion) and a link/pointer to holistic oil and gas study.

Then we will need something added to the oil and gas web site that talks about the holistic study. Karen should probably add something to the oil and gas website on our effort regarding the PA facilities and UOG.

You all can look to the summary in the plan themselves if that helps.

Any questions, see Brian and/or Eric.

Would be great if we have drafts by 4/2.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/24/2018 4:00:38 PM
To: Flanders, Phillip [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0cb247ef96f642f98cb727a9ed48e49e-Flanders, P]
Subject: RE: oil and gas study update

OK – thanks. Since we should be done with the study before the plan is published, there's no need to ask for comment on the study. It's possible we may have some other items at that point, but sounds like there will be plenty of time to figure that out.

From: Flanders, Phillip
Sent: Monday, September 24, 2018 11:47 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: oil and gas study update

For now, we'll need something to show to the AA when he reviews the plan in November prior to OMB review. We'll ask for updates again when time for publication comes around in March of 2019.

From: Pritts, Jesse
Sent: Friday, September 21, 2018 8:15 AM
To: Flanders, Phillip <Flanders.Phillip@epa.gov>
Subject: RE: oil and gas study update

What's your timing for publishing this? We plan to be done with our study early 2019.

From: Flanders, Phillip
Sent: Thursday, September 20, 2018 4:53 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: oil and gas study update

This, right? I think this is fine. Unless you want to use this a venue to solicit comment, which you could say here.

From: Pritts, Jesse
Sent: Thursday, September 13, 2018 3:30 PM
To: Flanders, Phillip <Flanders.Phillip@epa.gov>
Subject: oil and gas study update

Here's the current status of the oil and gas study. Let me know your thoughts on this:

The EPA is conducting a study evaluating management of produced water from oil and gas extraction activities under the Clean Water Act. The goal of the study is to understand if broader discharge of treated produced waters to Waters of the United States is supported. A key component of the study is to engage with stakeholders (including states, tribes, industry, academia and NGOs) to understand their experience and perspective on topics surrounding produced water management. The Agency conducted outreach with stakeholders from May through September, 2018 through a series of meetings and conference calls. The Agency held a public meeting in October, 2018 to report on what we learned. The Agency is currently drafting a white paper that can be used to inform next steps.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/13/2018 12:40:48 PM
To: Dressel, Paul [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=aef6d8272fa04f66857fae05433ae915-Dressel, Paul]
Subject: RE: outreach with PA on oil and gas study
Attachments: PA Outreach Schedule.xlsx

Thanks Paul – I think we are in good shape for the meetings. Attached is the final schedule in case anyone wants to attend. We are also looking into a webcast, or at least a conference line, for the Penn State meeting. I will also ask about a conference line for the meeting with DEP if anyone is interested in participating but not able to travel.

I don't think I need to know the list of companies for the inspections, but thanks for passing that on.

I'll keep you updated if anything changes.

Thanks,
Jesse

From: Dressel, Paul
Sent: Tuesday, September 11, 2018 10:41 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: outreach with PA on oil and gas study

Jesse

I have reached out to my regional counterparts in the programs and shared your list below.

- I am not aware of any additional PA state offices that should be included.
- I am not aware of any additional Colleges/Universities – other than ORD's project with Yale, which I believe is focused on Children's health
- I believe the Industry groups you have are representative.

They, nor I, have any additional suggestions to add to your list.

Scott Perry from PADEP is really the best source for what is happening in PA. Since you are already working with him, you should have a complete and comprehensive group that should be able to provide the information you are looking for.

One side note. Our air program is planning well pad inspections in October in western PA. I can get you the list of companies, once they are selected, if you think you would want to know.

I do not have anyone, at this point, that has expressed interest in attending. Please keep me in the loop as you setup/schedule these meetings. I would like to pass the information back to our programs and management to see if they would be able attend.

Thank you

Paul G. Dressel, Deputy Director
US EPA, Region 3
Office of Enforcement, Compliance
and Environmental Justice

Personal Phone / Ex. 6

dressel.paul@epa.gov

From: Pritts, Jesse
Sent: Tuesday, August 28, 2018 2:39 PM
To: Dressel, Paul <DRESSEL.PAUL@EPA.GOV>
Subject: RE: outreach with PA on oil and gas study

Hi Paul – I'm back from stakeholder meetings in Oklahoma, and I'm now working on arranging meetings in PA. Thought I'd fill you in on what's happened so far so we can brainstorm about who else to contact.

PA State Agencies: I've been in contact with some folks in PADEP (Dave Allard with the Bureau of Radiation Protection, Lee McDonnell with the Bureau of Clean Water, Scott Perry with the Office of Oil and Gas Management, and Walt Harner with the Bureau of Waste Management). They and staff working on produced water issues are available for a meeting with EPA on 9/26 at DEP headquarters in Harrisburg from 8:30 – Noon, so that has been scheduled. I have a contact at the PA DCNR (Kristin Carter, with the PA Geologic Survey) whom I will contact. *Are there any other PADEP offices, or other state agencies in PA that work on oil and gas issues that you know of that I should contact?*

Academia: I spoke with Nathaniel Warner at Penn State about arranging a meeting with academia, either in Harrisburg or in State College the week of 9/24. He and others at PSU are available. I will contact Radisav Vidic (at University of Pittsburgh, whom I know) about having researchers from Pitt participate. Nat also mentioned Meagan Mauter at Carnegie Mellon as someone to contact, so I will do that. *If there are others in academia working on produced water issues in Region 3 states that you know of to contact, please let me know.*

PA Crude Development Advisory Council: The PA CDAC wants to meet with us – currently working on getting that meeting scheduled.

Industry: I spoke with Mike Ward and David Clark with PGCC, and they would like to meet that week as well. We have not set a date yet. I need to identify contacts at other industry groups, including Pennsylvania Independent Petroleum Producers (PIPP) and Pennsylvania Independent Oil and Gas Association (PIOGA). *If you know of contacts at PIPP or PIOGA, or other industry groups representing oil and gas interests in PA, please let me know.*

Let me know if you've got ideas on any of these, and if you want to chat. Also, R3 would be welcome to attend any of the meetings we have, so keep that in mind.

Thanks

From: Dressel, Paul
Sent: Thursday, August 16, 2018 3:16 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: outreach with PA on oil and gas study

Jesse

I got your voicemail. I met with our EE workgroup on Tuesday.

I am still gathering information from the group. I have 2 state PADEP contacts

Seth Pelepko from the PADEP, Office of Oil and Gas Management and Ali Morris Tarquino from PADEP.

I understand that a local municipality reached out to you directly a few weeks back.

I will try to get you the complete list as soon as possible. I will be back in the office tomorrow

Paul G. Dressel, Deputy Director
US EPA, Region 3
Office of Enforcement, Compliance
and Environmental Justice

Personal Phone / Ex. 6

dressel.paul@epa.gov

From: Pritts, Jesse

Sent: Thursday, August 09, 2018 12:12 PM

To: Dressel, Paul <DRESSEL.PAUL@EPA.GOV>

Subject: outreach with PA on oil and gas study

Hi Paul – OW would like to conduct outreach with PA players in oil and gas produced water management for the national produced water study. Are you coordinating oil and gas activities for R3? We could use some help identifying stakeholders (state agencies, industry, NGOs, academia, etc.) that we should be engaging with and with some meeting logistics. We're thinking of a few in-person meetings in Philadelphia in September. Be great to talk to you, or others, about this effort and how R3 can support OW. Please let me know how best to proceed.

Thanks,

Jesse

=====

Jesse W. Pritts, P.E.

United States Environmental Protection Agency
Office of Water | Office of Science and Technology

to Personal Phone / Ex. 6

email. pritts.jesse@epa.gov

<https://www.epa.gov/eg>

Stakeholder

PA Grade Crude Development Advisory Council

Contact

Adam Walters

Contact #

Personal Phone / Ex. 6

Industry

Pennsylvania Independent Petroleum Producers

Mark Cline, President

Joe Thompson

Pennsylvania Independent Oil and Gas Association

David Ochs

Burt Waite

Pennsylvania Grade Crude Oil Coalition

Bruce Grindle

Arthur Stewart

PGCC

Mike Ward

David Clark, President

PIOGA

Dan Weaver, President

Personal Phone / Ex. 6

Personal Phone / Ex. 6

Marcellus Shale Coalition

David Spigelmyer

State

PADEP, Bureau of Radiation Protection

David Allard

PADEP, Bureau of Clean Water

Lee McDonnell

PADEP, Office of Oil and Gas Management

Scott Perry

PADEP, Bureau of Waste Management

Walt Harner

Personal Phone / Ex. 6

Academia

PennState Marcellus Center for Outreach and Research

David Yoxheimer

Thomas Murphy,

Director

Andrew Nyblade

Personal Phone / Ex. 6

Shale Network

David Yoxheimer

Radisav Vidic

PSU

Nathaniel Warner

Carnegie Mellon

Meagan Mauter

Personal Phone / Ex. 6

Contact email**Notes**

adwalters@ Personal Email / Ex. 6

mark.cline@ Personal Email / Ex. 6

PA CDAC Member. Will attend industry mtg.
PA CDAC Member
PA CDAC Member
PA CDAC Member. Will attend industry mtg.
PA CDAC Member
PA CDAC Member
PA CDAC Member. Will attend industry mtg.

michael.ward1228@ Personal Email / Ex. 6

dan@ Personal Email / Ex. 6

emailed 8/31. Will attend industry mtg.

dspigelmyer@ Personal Email / Ex. 6

emailed 8/30. Will attend industry mtg.

Mtg. 9/26 @ DEP
Mtg. 9/26 @ DEP
Mtg. 9/26 @ DEP
Mtg. 9/26 @ DEP

<http://www.marcellus.psu.edu/about-mcor.html>

tbm1@ Personal Email / Ex. 6

mauter@ Personal Email / Ex. 6

Called 8/27. Can meet in Harrisburg or State College

Day	Date	Activity	Location	Time
Monday	9/24/2018	Travel to State College		
Tuesday	9/25/2018	Mtg. w/ Academia	PSU, State College PA	1 PM - 4 PM
			Rachel Carson Building, 12th Floor 400 Market Street	
Wednesday	9/26/2018	Meting w/ State Agencies	Harrisburg, PA	8:30 - Noon
		Pre-meet w/ CDAC	Rachel Carson Building, 14th Floor	12:00 - 1:00 PM
		Meed w/ Industry	MC 461 in Capital Bldg.	2:00 - 4:00 PM
Thursday	9/27/2018	Meet w/ CDAC	Turnpike Commission, HBG	10:30 - 11:30 Tentative
		Travel home		Afternoon

Notes

Nat Warner at PSU organizing.

PADEP Office of Oil and Gas Management (Scott Perry)

PADEP Bureau of Clean Water (Lee McDonnell)

PADEP Bureau of Radiation Protection (Dave Allard)

PADEP Bureau of Waste Management (Walter Harner)

POC Adam Walters 717-214-6548

PIOGA, PGCC, PIPP and Marcellus Shale Coalition
confirmed.

Per Congressman Glenn Thompson's Office

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/10/2018 4:45:34 PM
To: Mordick, Briana [bmordick@epa.gov] Personal Email / Ex. 6
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Hi Briana –

Let's set up a call soon to discuss. Calendars are pretty tight the next few weeks, but here are some dates/times that the EPA team is available for an hour discussion:

Wednesday 5/16 @ 1 PM Eastern

Wednesday 5/23 between 2:30 PM and 4:30 PM Eastern

Thursday 6/7 @ 2 PM Eastern

FYI, EPA Region 8 is hosting some stakeholder meetings in Denver on May 21 and 22. They have contacted stakeholders that may be interested in attending, and that included Sarah Tallman at NRDC since there has been past interaction with Sarah regarding oil and gas activities in the region 8 states. Just wanted to let you know that is part of the same effort, and that we are all talking, in case you had heard of that meeting.

Thanks,
Jesse

From: Mordick, Briana [mailto:bmordick@epa.gov] Personal Email / Ex. 6
Sent: Wednesday, May 09, 2018 7:09 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Hi Jesse,

Thanks very much for the quick response. It would be great to set up a call to discuss individually, but we'd also be happy to participate in a group discussion as well, if that would be useful. Please let me know when you're available to talk.

Thanks,
Briana

From: Pritts, Jesse [mailto:Pritts.Jesse@epa.gov]
Sent: Wednesday, May 9, 2018 9:02 AM
To: Mordick, Briana <bmordick@epa.gov> Personal Email / Ex. 6
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Hi Briana – We are interested in produced water from onshore production, both conventional and unconventional extraction. Since we've just kicked off the study, we are interested in engaging with a variety of stakeholders to evaluate topics such as current management practices for these wastewaters, the availability and performance of treatment technologies, and how EPA's Clean Water Act regulations address management of these wastewaters. If you haven't seen our web page, a link is provided below.

Our plan is to conduct outreach for the next 5-6 months, and to have a completed report in about a year. I'd be happy to set up a time to discuss and get input from NRDC. We can have either conference calls or in-person meetings. We can also meet individually with NRDC, or we could set up a group discussion with other NGOs' – just let me know your preference. I don't currently have a listserve, but we can arrange to check-in periodically to provide updates if that works.

Thanks for reaching out, and I look forward to our discussions.

<https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>

Regards,

Jesse W. Pritts, P.E.

United States Environmental Protection Agency

tel: Personal Phone / Ex. 6

From: Mordick, Briana [<mailto:bmordick@> Personal Email / Ex. 6]
Sent: Wednesday, May 09, 2018 11:34 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Study of Oil and Gas Extraction Wastewater Management

Dear Mr. Pritts,

I'm writing to learn more about EPA's recently announced study of regulation and management of wastewater from the oil and gas industry. Any additional information you can provide about the scope and timing of the study would be much appreciated. NRDC would also be very interested in being among the stakeholders contacted to discuss current wastewater management practices. Finally, is there an email listserv I can sign up for to receive updates and information?

Thanks in advance for your time,
Briana Mordick

BRIANA MORDICK
Senior Scientist
Nature and Climate & Clean Energy Programs

NATURAL RESOURCES
DEFENSE COUNCIL

Personal Address / Ex. 6

Personal Phone / Ex. 6

BMORDICK@NRDC.ORG Personal Email / Ex. 6

Please save paper.
Think before printing.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 6/4/2018 8:23:34 PM
To: Jenna.Adamson@[Personal Email / Ex. 6]
Subject: RE: Question about May CWT Facility Study

Hi Jenna – We did complete a report (the May 2018 one) which we are characterizing as a compilation of information collected so far regarding CWT facilities that accept oil and gas extraction wastes. However, we have not made any decisions about next steps for that industry and instead will consider this in the context of a broader oil and gas study that we have just begun and was announced in the final 2016 plan. Here is a link to that page:

<https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>

Hope that answers your question – if not, let me know.

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel. [Personal Phone / Ex. 6]

From: Jenna.Adamson@[Personal Email / Ex. 6]mailto:Jenna.Adamson@[Personal Email / Ex. 6]
Sent: Monday, June 04, 2018 4:17 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Question about May CWT Facility Study

Hi Jesse,

Thanks in advance for your time answering my quick question. In the Final 2016 Effluent Guidelines Program Plan (April 2018), the EPA announced its intention to consider the regulation of CWT facilities in the context of a larger study of management of oil and gas extraction wastewater (p. 7-2). Is the Detailed Study of the Centralized Waste Treatment Point Source Category for Facilities Managing Oil and Gas Extraction Wastes (May 2018) that study, or are you still working on it?

Thanks again,

Jenna Adamson*
Summer Associate

LATHAM & WATKINS LLP
555 Eleventh Street, NW
Suite 1000
Washington, D.C. 20004-1304

Personal Phone / Ex. 6

Email: jenna.adamson@[Personal Email / Ex. 6]

Personal Email / Ex. 6

*Not admitted to practice in
any jurisdiction. All work

supervised by a member of
the DC Bar.

This email may contain material that is confidential, privileged and/or attorney work product for the sole use of the intended recipient. Any review, disclosure, reliance or distribution by others or forwarding without express permission is strictly prohibited. If you are not the intended recipient, please contact the sender and delete all copies including any attachments.

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Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 10/11/2018 1:19:23 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: RE: Rolling Stone Journalist at EPA Public Meeting on Oil & Gas Wastewater Management following up with Questions..

Deliberative Process / Ex. 5

From: Fuld, John
Sent: Wednesday, October 10, 2018 4:15 PM
To: Matuszko, Jan <Matuszko.Jan@epa.gov>
Cc: Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>
Subject: Re: Rolling Stone Journalist at EPA Public Meeting on Oil & Gas Wastewater Management following up with Questions..

Office inquiry not due until Tuesday the 16th

From: Justin Nobel [<mailto:justinnobel@epa.gov>] Personal Email / Ex. 6
Sent: Wednesday, October 10, 2018 7:11 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: Lynn, Tricia <lynn.tricia@epa.gov>; Forsgren, Lee <Forsgren.Lee@epa.gov>

Subject: Rolling Stone Journalist at EPA Public Meeting on Oil & Gas Wastewater Management following up with Questions..

Dear Jesse,

It was nice to meet yesterday at the EPA meeting on Oil & Gas Extraction Wastewater Management. As I may have mentioned, I write on issues of science and the environment for Popular Mechanics, National Geographic and a number of other US publications, and presently I am working on a story for Rolling Stone magazine that will focus on some of the issues connected to oil and gas wastewater, including the topic of radioactivity. First off, I am just wondering if you can pass along a copy of the PowerPoint presentation you gave at the meeting? There was a lot of great information in the presentation, and it would be helpful to have it all organized in one place.

Below I have laid out a few questions that were inspired by EPA's public meeting as well as my familiarity with past EPA reports on this topic. I have CCed Press Officer Tricia Lynn, who has been helpful in handling questions I have on this issue. I have also CCed Deputy Assistant Administrator Lee Forsgren. If possible, it would be great to have a phone conversation (with Jesse) early next week, but I understand you have a busy schedule. If a talk by phone is not possible then I am hoping EPA can answer my Questions via email. My Questions are below. Thank you again to everyone for your time and attention:

1. EPA's recent paper on Centralized Waste Treatment facilities, "Detailed Study of the Centralized Waste Treatment Point Source Category for Facilities Managing Oil and Gas Extraction Wastes" was extremely informative and very helpful for my present story. I was impressed by the detailed nature of the report, which pointed out several significant issues with CWTs, including that their present permits are often too limited given the complex nature of their operations and discharges, and that many CWTs are actually running on outdated permits, and that these facilities can often enable the discharges of worrisome contaminants into the the environment, including ones that may seriously jeopardize human health—"Documented and potential impacts to both aquatic life and human health related to discharges from CWT facilities treating oil and gas extraction wastewater exist due to the prevalence of some pollutants... CWT effluents have been shown to adversely affect downstream aquatic life... Multiple drinking water intakes are situated downstream of CWTs accepting oil and gas extraction wastewater within distances at which impacts to drinking water from CWTs have previously been identified." It would appear from the well-researched conclusions of this paper that CWTs are already failing to adequately process the massive streams of oil and gas wastewater they are receiving, and thus I am wondering, given this paper's conclusions, how is it possible for EPA, an agency with a core mission of "protecting human health and the environment" to—and here I am quoting words from yesterdays EPA public meeting—"support regulations that would broaden discharge of oil and gas extraction wastewater to surface waters"? And just to repeat the main thrust of my Question here: EPA's previously-mentioned CWT report presents a powerful case for enacting much **stricter** regulations over facilities that process oil and gas wastewater, thus I am wondering in the face of such agency-produced analysis, how could EPA possibly decide that the appropriate decision is to **broaden** discharges of oil and gas extraction wastewater to surface waters?

2. One of the main issues my story with Rolling Stone magazine will focus on is the radioactive content of oil and gas wastewater. I know this radioactivity is very difficult to remove from the waste stream and presents numerous challenges to

operators, yet at no point during yesterday's public meeting on oil and gas wastewater did EPA mention or acknowledge the radioactivity of oil and gas wastewater—Why did EPA not mention the radioactive content of oil and gas wastewater at yesterday's public meeting? Does EPA believe the radioactive content of oil and gas extraction wastewater is a significant issue? Or perhaps EPA believes that the radioactive content of oil and gas extraction wastewater is an issue that is not so significant?

3. Lastly, What federal agency is charged with ensuring oil and gas industry workers, the general public, and the environment are protected from the radioactivity brought to the surface by both conventional and unconventional oil and gas development? In essence, who manages and regulates the radioactivity generated by the oil and gas industry?

I have run this Question by officials at both OSHA and NIOSH (National Institute for Occupational Safety and Health, within the CDC) as well as folks connected to the Nuclear Regulatory Commission, and it appears that there is actually no federal agency specifically tasked with addressing radiation and radioactivity issues in the oil and gas industry..? I am wondering if I am correct in that determination? If that is not the case then please do let me know, And please let me know which agency, either within EPA (perhaps the Office of Air and Radiation..?) or outside of EPA, would be appropriate to contact on this topic?

Thank you again.

Sincerely,
Justin

--

Justin Nobel

Personal Phone / Ex. 6

Personal Email / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/12/2018 7:07:53 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]; Karen Milam (Milam.Karen@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]
Subject: RE: Draft Oil and Gas Study Comm Plan

Here's a link to a draft comms plan on sharepoint. I'll continue to add in contacts, but in the meantime you can review to see if this aligns with the message and approach you were envisioning.

Deliberative Process / Ex. 5

From: Matuszko, Jan
Sent: Thursday, April 12, 2018 8:04 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Draft Oil and Gas Study Comm Plan

What's the ETA on a draft plan?

Jan Matuszko
Chief, Engineering and Analytical Support Branch
Office of Water
Environmental Protection Agency
(202) 566-1035

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 6/25/2018 6:23:16 PM
To: Kylie Wright [wright.a.kylie@Personal Email / Ex. 6]
Subject: RE: Texas Alliance of Energy Producers
Attachments: EPA Oil and Gas Study June 21 2018-share.pdf

Hi Kylie – yes, here is the presentation. Let me know if you have any questions.

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel: Personal Phone / Ex. 6

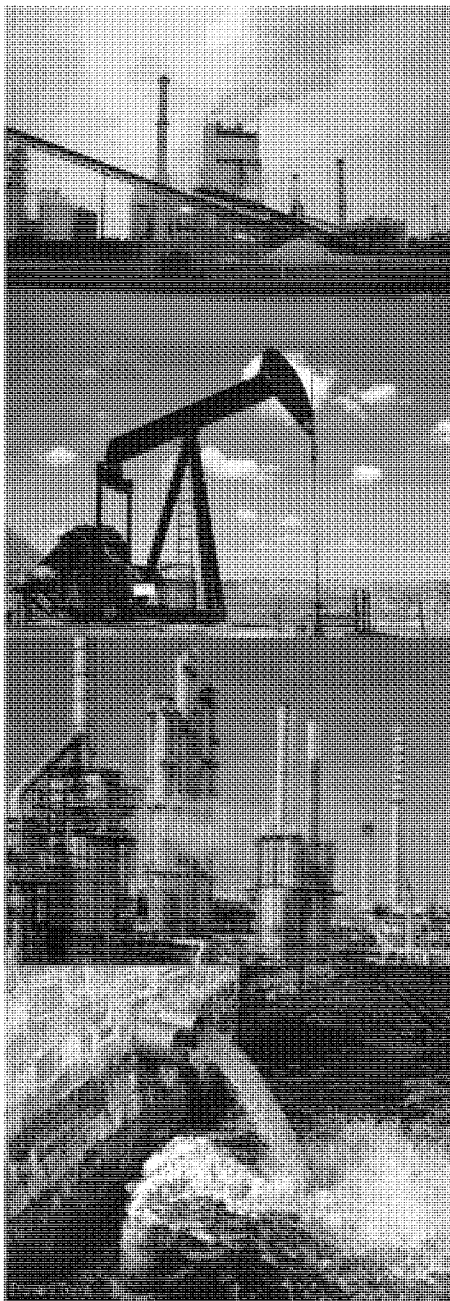
From: Kylie Wright [mailto:wright.a.kylie@Personal Email / Ex. 6]
Sent: Monday, June 25, 2018 12:52 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Texas Alliance of Energy Producers

Hi Jesse,

We met at the meeting last Thursday in Austin, I work for John. Would it be possible for you to send me your presentation from last Thursday? Blythe and I are getting our thoughts together on our paper, and it would be helpful to have some of the definitions from your PowerPoint. Thanks so much for your help.

Best,
Kylie Wright

--
Kylie Wright
K. Wright Geology Consulting
Texas Alliance of Energy Producers
wright.a.kylie@Personal Email / Ex. 6
Personal Phone / Ex. 6



EPA Oil and Gas Extraction Study Effluent Guidelines Program

Presented at:

Texas Stakeholders Meeting
Austin, Texas
June 2018

NPDES Program Background

- The National Pollutant Discharge Elimination System (NPDES) was created in 1972 by the Clean Water Act (CWA)
- Addresses water pollution by regulating point source discharges of pollutants to waters of the United States
- A point source is a discernible, confined and discrete conveyance, including... any pipe, ditch, channel, tunnel, conduit...
- Applies to industrial sources as well as discharges from municipal wastewater treatment plants
- The goal of the CWA is zero discharge of pollutants

NPDES Permits

- Any discharge of pollutants to surface waters or to municipal sewage treatment plants must obtain authorization to discharge (i.e., a permit).
- NPDES permits contain both technology-based effluent limitations as well as water quality-based effluent limitations
- Water quality-based effluent imitations are protective of the water quality of the receiving water. Water quality goals for water bodies are defined by state water quality standards.
 - Restoring and maintaining the chemical, physical and biological integrity of waters
 - Protection and propagation of fish, shellfish and wildlife and recreation in and on the water

Technology-Based Permit Limits

- - *What are their objective?*

- Intended to define the minimum level of pollution control for industrial wastewater
 - Determined by assessing the pollution reduction capability of manufacturing process controls and wastewater treatment technologies
 - “end-of-the-pipe” pollutant limits
 - process changes and best management practices (BMPs) may also be specified
 - performance based (do not mandate the use of a specific technology)
- Provide equity among dischargers with an industry sector
 - Industry-specific (e.g., paper mills, oil & gas activities, steel mills)
 - Apply to all facilities throughout the country within the industry sector
- Not based on the water quality of individual receiving waters
 - Intended to avoid the difficulties of linking water quality impacts to specific pollutant sources

How are the Discharge Limits in NPDES Permits Determined?

Water Quality Standards



Technology-Based Limits



The more stringent limit applies!

NPDES Permit Discharge Limit

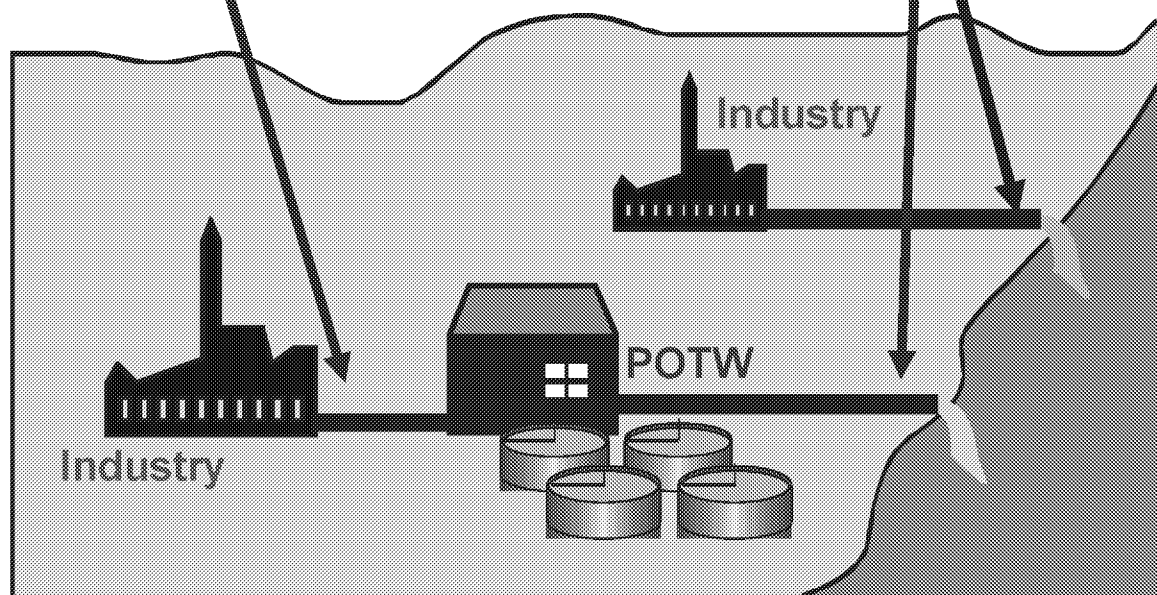
Programs to Control Industrial Discharges

- **National Pretreatment Program**

- Controls for industrial & commercial facilities that discharge wastewater to sewage treatment plants
- Controls interference and pass-through of pollutants

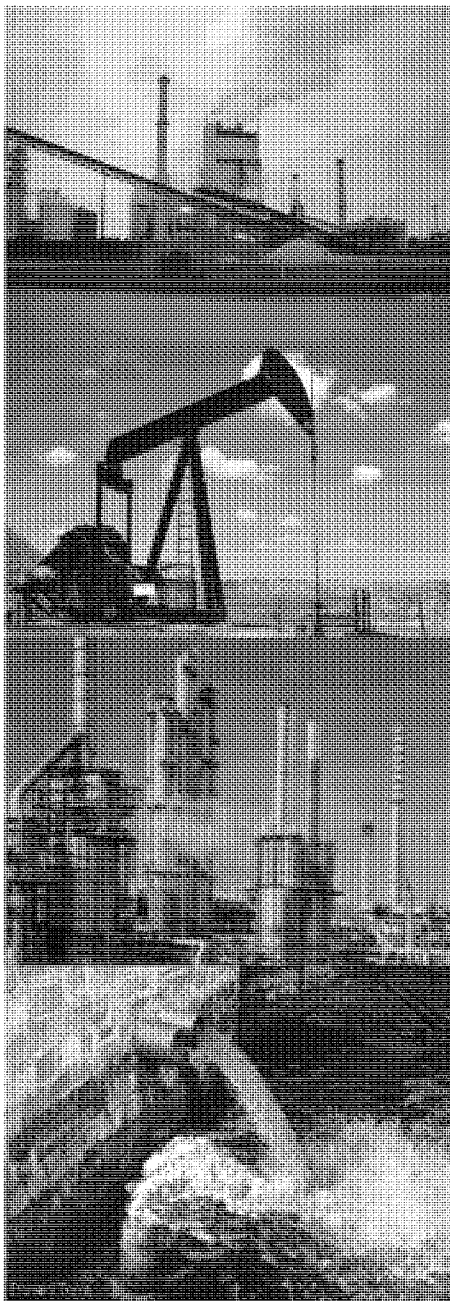
- **National Pollutant Discharge Elimination System (NPDES) discharge permits**

- Permits for industrial & commercial facilities that discharge directly to surface waters ("direct dischargers")
- Permits for sewage treatment plants



Success of the Effluent Guidelines Program

- EPA has published technology-based effluent guidelines and standards for 57 major industrial categories (with over 450 subcategories).
- Measurable environmental improvement
 - Effluent guidelines (as incorporated into permits) prevent discharges of almost 700 billion pounds of pollutants annually
 - Incorporated into permits for 35,000 – 45,000 direct discharging facilities and more than 12,000 indirect discharging facilities
- Forty year history based on solid foundation of data and analysis.



EPA Oil and Gas Extraction Study

Presented at:
Texas Stakeholders Meeting
Austin, Texas
June 2018

Effluent Guidelines affecting Oil and Gas Produced Fluids

- EPA has two regulations that affect discharge of oil and gas extraction wastewaters:
 - Oil and gas extraction effluent guidelines
 - 40 CFR Part 435
 - Centralized waste treatment effluent guidelines
 - 40 CFR Part 437

Oil and Gas Extraction Guidelines

- For onshore facilities, the oil and gas extraction guidelines generally prohibit discharge of pollutants in oil and gas extraction wastewaters directly to surface waters (zero discharge).
 - Exception is discharge for beneficial reuse west of 98th meridian
- Also, discharge of pollutants from unconventional extraction activities to POTWs is prohibited

Centralized Waste Treatment (CWT) Guidelines

- CWT facilities accept wastewater from off-site for treatment or reuse
- CWT facilities can accept oil and gas extraction wastewater and can discharge
- CWT rules were not developed specifically for produced fluids, so the limitations and the technology basis are generally not sufficient for those wastewaters

Oil and Gas Study

- New study looking at how EPA, states and stakeholders regulate and manage wastewater from the oil and gas industry
- We are hearing that the zero discharge of pollutants standards may be more difficult to meet in future
- Also, concerns over water scarcity
- Focus of is to engage with stakeholders to consider available approaches to manage wastewater from both conventional and unconventional oil and gas extraction at onshore facilities
- Goal is to understand if broader discharge of treated produced waters to surface waters is supported

Process

- Conduct outreach and learn about the issues
 - May through September
- Report-out
 - October
- Prepare white paper
 - January
- Decide next steps

Discussion Topics

- Produced water management - pros/cons with the status quo.
- Produced water management alternative options - technologies, availability, drivers, etc.
- Current or future produced water management barriers to alternatives.
- Concerns related to federal regulations that allow for the discharge of treated produced water to surface waters and/or to municipal wastewater treatment.

Discussion Topics

- Challenges to permitting facilities that treat and discharge produced waters.
- Appropriate level of treatment required for produced waters that will be discharged to surface waters and/or Publicly Owned Treatment Works (POTWs).
- Existing state regulations/requirements that conflict with different federal approaches to produced water management (e.g., water rights).

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/9/2018 4:01:58 PM
To: Mordick, Briana [bmordick@
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Hi Briana – We are interested in produced water from onshore production, both conventional and unconventional extraction. Since we’ve just kicked off the study, we are interested in engaging with a variety of stakeholders to evaluate topics such as current management practices for these wastewaters, the availability and performance of treatment technologies, and how EPA’s Clean Water Act regulations address management of these wastewaters. If you haven’t seen our web page, a link is provided below.

Our plan is to conduct outreach for the next 5-6 months, and to have a completed report in about a year. I’d be happy to set up a time to discuss and get input from NRDC. We can have either conference calls or in-person meetings. We can also meet individually with NRDC, or we could set up a group discussion with other NGOs’ – just let me know your preference. I don’t currently have a listserve, but we can arrange to check-in periodically to provide updates if that works.

Thanks for reaching out, and I look forward to our discussions.

<https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel.

From: Mordick, Briana [mailto:bmordick@
Sent: Wednesday, May 09, 2018 11:34 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Study of Oil and Gas Extraction Wastewater Management

Dear Mr. Pritts,

I’m writing to learn more about EPA’s recently announced study of regulation and management of wastewater from the oil and gas industry. Any additional information you can provide about the scope and timing of the study would be much appreciated. NRDC would also be very interested in being among the stakeholders contacted to discuss current wastewater management practices. Finally, is there an email listserv I can sign up for to receive updates and information?

Thanks in advance for your time,
Briana Mordick

BRIANA MORDICK
Senior Scientist
Nature and Climate & Clean Energy Programs

NATURAL RESOURCES
DEFENSE COUNCIL

Personal Address / Ex. 6

Personal Phone / Ex. 6

BMORDICK@
NRDC.ORG

Personal Address / Ex. 6

Please save paper.
Think before printing.

Appointment

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/24/2018 12:12:18 PM
To: Forsgren, Lee [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a055d7329d5b470fbaa9920ce1b68a7d-Forsgren, D]
Subject: Accepted: Oil and Gas Wastewater Study Public Meeting
Location: 3233 WJCE Call in **Personal Phone / Ex. 6**
Start: 10/5/2018 5:00:00 PM
End: 10/5/2018 5:30:00 PM
Show Time As: Busy

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 8/24/2018 6:52:18 PM
To: Flanders, Phillip [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0cb247ef96f642f98cb727a9ed48e49e-Flanders, P]
Subject: RE: Update for O&G Study

I was on travel all week. Let me know if you still need something.

From: Flanders, Phillip
Sent: Tuesday, August 21, 2018 10:09 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Update for O&G Study

Sorry, need this ASAP

From: Flanders, Phillip
Sent: Monday, August 20, 2018 2:20 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Update for O&G Study

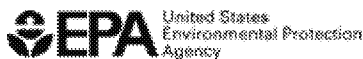
Would you mind providing updated talking points for the Oil and Gas study? I'm not in the loop for that project so my notes are out of date.

This is what I had previously:

We are conducting outreach with a variety of stakeholders, including states, industry, academia and NGOs to obtain input on produced water management challenges. Outreach will continue throughout the spring and summer.

Phillip Flanders, Ph.D., P.E.

Environmental Engineer
Engineering and Analysis Division
Office of Science and Technology
Office of Water



Mail Code 4303T
(202) 566-8323
www.epa.gov/eg

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 7/18/2018 1:22:10 PM
To: Pfeiffer, Tricia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3c7cd189c22a4b5589feaf5ef4b254f3-Pfeiffer, Tricia]
Subject: FW: Concur Itinerary 08/20/2018: OIL AND GAS MEETINGS OKLAHOMA CITY (T4X3XM)
Attachments: IAD-OKC.ics; OKC-IAD.ics

Hi Trish – here's my travel information for Oklahoma City. Karen arrives with me and is also staying at the Embassy Suites. I was able to book the hotel at the gov't rate through Concur.

From: Concur Travel [mailto:TravelWizard@concursolutions.com]
Sent: Thursday, July 05, 2018 2:26 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Concur Itinerary 08/20/2018: OIL AND GAS MEETINGS OKLAHOMA CITY (T4X3XM)

Trip Overview

Trip Name: Oil and Gas Meetings Oklahoma City
Start Date: August 20, 2018
End Date: August 24, 2018
Created: July 05, 2018, JESSE PRITTS (*Modified: July 05, 2018*)
Description: Oil and gas study meetings in Oklahoma City.
Trip Purpose: 2-INFORMATIONAL MEETING
Agency Record Locator: T4X3XM
Passengers: Jesse W Pritts
Total Estimated Cost: \$1,166.44 USD

Important: Reservations must be approved and ticketed no later than: 08/18/2018 3:15 PM Eastern
The trip will be automatically cancelled if it is not approved before the deadline.

Agency Name: BCD_EPA

Reservations

Monday, August 20, 2018



Flight Washington, DC (IAD) to Oklahoma City, OK (OKC)

United 6341

Operated by: MESA AIRLINES DBA UNITED EXPRESS

Departure: 05:15 PM

Seat: 16B (Confirmed)
Washington Dulles Intl Airport (IAD)
Duration: 3 hours, 2 minutes
Nonstop

Arrival: 07:17 PM

Oklahoma City Will Rogers Airport (OKC)

Additional Details

Aircraft: E7W
E-Ticket
Emissions: 441.9 lbs CO₂
Cabin: Economy (S)

Confirmation: IQD4FH

Status: Confirmed

Distance: 1133 miles

Meal: Meal at Cost

**Enterprise Car Rental at: Oklahoma City US (OKC)**

Pick-up at: Oklahoma City US (OKC)

Pick Up: 07:17 PM Mon Aug 20Pick-up at: Oklahoma City US (OKC)
Number of Cars: 1**Confirmation: 1041978270COUNT**Status: Confirmed
Frequent Guest Number: HJPHR6P
Rate Code: EM3**Return: 07:45 AM Fri Aug 24**

Returning to: Oklahoma City US (OKC)

Additional DetailsRate: \$52.00 USD daily rate, unlimited miles
Total Rate: \$308.38 USD

Corporate Discount: FGTDYEP

Rental Details

Intermediate / Car / Automatic transmission / Air conditioning

**EMBASSY SUITES OKC**

741 North Phillips Avenue Oklahoma City OK 73104 US

Checking In: Mon Aug 20

15:00

Room 1, Days 4, Guests 1

Confirmation: 94892046

Status: Confirmed

Checking Out: Fri Aug 24

12:00

Additional Information

Daily Rate: \$95.00 USD

Total Rate: \$433.66 USD

Room Details

Room Description: RoomDescriptionCodeA02B62

Special Instructions: Nonsmoking

Cancellation Policy

4Pm Cancel Day Of Arrival

Friday, August 24, 2018

**Flight Oklahoma City, OK (OKC) to Washington, DC (IAD)****United 6075**

Operated by: MESA AIRLINES DBA UNITED EXPRESS

Departure: 07:45 AM

Seat: 12C (Confirmed)

Oklahoma City Will Rogers Airport (OKC)

Duration: 2 hours, 41 minutes

Confirmation: IQD4FH

Status: Confirmed

Nonstop

Arrival: 11:26 AM

Washington Dulles Intl Airport (IAD)

Additional Details

Aircraft: E7W

Distance: 1133 miles

E-Ticket

Emissions: 441.9 lbs CO₂

Cabin: Economy (S)

Meal: Meal at Cost

Total Estimated Cost**Air****Airfare quoted amount: \$368.38 USD****Taxes and fees: \$56.02 USD****Air Total Price: \$424.40 USD****Hotel: \$433.66 USD****Car: \$308.38 USD****Total Estimated Cost: \$1,166.44 USD****TICKET NOT YET ISSUED. AIRFARE QUOTED IN ITINERARY IS NOT GUARANTEED UNTIL TICKETS ARE ISSUED.****Remarks**

FOR 24/7 TRAVEL ASSISTANCE PLEASE CONTACT
THE BCD TRAVEL TEAM AT 1-866-964-1346
FOR OUTSIDE THE US CALL COLLECT 770-829-2609
FOR THE HEARING IMPAIRED- PLEASE DIAL 711
TO ACCESS RELAY SERVICE- PROVIDE PHONE
NUMBER OF 1-866-964-1346 TO ACCESS TRAVEL

DUE TO RECENT CHANGES IN THE FY15 GOVERNMENT CITY PAIR
PROGRAM/PPP YOUR AIR RESERVATIONS ARE SUBJECT TO
CANCELLATION BY THE AIRLINES IF NOT TICKETED AT LEAST
48 HOURS PRIOR TO SCHEDULED DEPARTURE
PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN
ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS
THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING.
THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO
INTERNATIONAL RESERVATIONS UNLESS YOUR TRIP HAS DOMESTIC
CONNECTIONS ON MORE THAN ONE AIRLINE OR THESE
RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 6/25/2018 2:48:08 PM
To: Kathleen Ligon [Kathleen.Ligon@Personal Address / Ex. 6]
Subject: RE: Tomorrow's meeting
Attachments: EPA Oil and Gas Study June 21 2018-share.pdf

Hi Kathleen – thanks again for getting together to talk about produced water management in Texas. Karen and I found the discussion to be very helpful. I think we got what we needed from the meeting, but I'll let you know if we have any follow-up items. Here is the presentation I gave at the Alliance meeting. Let me know if there are any questions.

Jesse

From: Kathleen Ligon [mailto:Kathleen.Ligon@Personal Address / Ex. 6]
Sent: Thursday, June 21, 2018 4:32 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Tomorrow's meeting

Jesse – We enjoyed getting to hear about the study and hope you and Karen have a good trip back! It would be great if you could send me the presentation that you gave this morning so I could share with our folks.

Please let me know if there's anything else you might need from us.

Kathleen

From: Pritts, Jesse [mailto:Pritts.Jesse@epa.gov]
Sent: Tuesday, June 19, 2018 8:32 PM
To: Leslie Savage <Leslie.Savage@Personal Address / Ex. 6>; Lori Wrotenbery <lori.wrotenbery@Personal Address / Ex. 6>; Kathleen Ligon <Kathleen.Ligon@Personal Address / Ex. 6>
Cc: Lorrie Council <lorrie.council@Personal Address / Ex. 6>; debi.armbruster@Personal Address / Ex. 6
Subject: Tomorrow's meeting

Hi everyone – I'm looking forward to our discussion tomorrow. Leslie, Lori and Kathleen, could you reply to all with expected attendees from RRC and TWDB? That will allow Lorrie and Debi (from CEQ) to make sure the room is set up for the number of expected attendees. From EPA it will be myself and Karen Milam. Thanks, and see you all tomorrow afternoon. I probably won't be on email tomorrow, but you can reach me on my mobile if you need to Personal Phone / Ex. 6
Jesse

p.s., here is the conference line in case anyone wants to call-in.

Join by Phone

Toll number Personal Phone / Ex. 6
[Find a local number](#)

Conference ID Personal Phone / Ex. 6

[Help](#)

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/8/2018 5:02:55 PM
To: Christine Dougherty [CDougherty@Personal Address / Ex. 6]
Subject: RE: Study of Oil and Gas Extraction Wastewater Management

Hi Christine – we’ve just kicked off the study and are in the process of identifying stakeholders. We’ve actually already identified COGCC as a stakeholder and are planning to meet with them on the afternoon of May 21 in Denver. You can coordinate any input with COGCC, but we would also be happy to receive input in other ways as well (conference call, written comments, etc.). Just let me know how you would like to participate. Since we’ve just started the study, the only information available is what is on our website (see link below). As far as progress, we’ve already had some discussions with state regulatory agencies, industry stakeholders and NGOs. We will continue or outreach efforts for the next 5-6 months.

<https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>

Thanks for your interest, and let me know if you would like to discuss further.

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel. Personal Phone / Ex. 6

From: Christine Dougherty [mailto:CDougherty@Personal Address / Ex. 6]
Sent: Tuesday, May 08, 2018 11:15 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Study of Oil and Gas Extraction Wastewater Management

Dear Jesse Pritts,

I am reaching out to you today in response to the recent article published on the EPA’s website called “Study of Oil and Gas Extraction Wastewater Management”. As Adams County’s Local Government Designee for the Colorado Oil and Gas Conservation Commission and liaison for our residence the disposal of wastewater from fracking activities is of particular interest to me, as is the potential to recycle the water for reuse by industry or other potential uses which may be identified.

Where can I find out more information about the study, such as;

- Who are stakeholders in the study
- Progress of the study
- Will you be taking comments from stakeholders
- How can interested stakeholders participate

I greatly appreciate your time and response.

Sincerely,



Christine Dougherty

Oil & Gas Liaison, *Community & Economic Development Department*

Personal Address / Ex. 6

04

Personal Phone / Ex. 6

cdougherty@

Personal Address / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 7/31/2018 7:10:10 PM
To: Mark Wilson [mwilson@**Personal Address / Ex. 6**]
Subject: RE: EPA Study of Produced Water Management

Hi Mark –

Thanks for reaching out regarding EPA's produced water study. Below are answers to your questions. In addition, we would welcome a conversation about the Produced Water Society and what role your members could play in informing EPA on this important topic. Could we set up a conference call with the EPA team and some of your members? I can suggest some times that work for the EPA team.

Q: Do you have any more information that further explains the study announced on May 2nd? Is there a schedule established yet for study milestones?

A: The most up to date information about the study can be found on EPA's web page: <https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>. Our current plans are to continue outreach through the summer. In October, we plan to hold a public meeting in Washington, DC to report on what we have learned and to allow stakeholders to provide additional input to EPA. Following that, we plan to prepare a white paper that will likely be used by EPA's decisionmakers to determine next steps. This could include regulatory and/or non-regulatory approaches.

Q: On the EPA's web site that describes the study, "stakeholder" are referred to several times. Who are these stakeholders?

A: We have been reaching out to states, tribes, academia, industry, technology vendors and NGOs to learn about produced water generation, management and treatment. We welcome input from any interested party.

Q: The term "available approaches" to manage wastewater is also referred to. Are these "available approaches" delineated anywhere?

A: Some currently available approaches include reuse within the oil and gas sector, disposal (such as underground injection), and in limited cases discharge to surface waters or to publicly-owned treatment works (or POTWs). The white paper that we plan to prepare will describe information we collect on available approaches.

Q: And can you explain what is meant by "broader discharge" in this sentence included in the 3rd paragraph?

A: Currently, discharge of oil and gas wastewater from onshore oil and gas extraction facilities is limited under federal regulations at 40 CFR Part 435. These regulations specify no discharge of wastewater pollutants to surface waters except west of the 98th meridian when such wastewater is of good enough quality and is used for agriculture or wildlife propagation. In addition, off-site centralized waste treatment facilities can accept oil and gas extraction wastewater for treatment and discharge. These facilities are currently regulated under 40 CFR Part 437. A focus of the study is to consider whether allowing additional discharges of treated oil and gas wastewater to surface waters would be supported, and if so, to better understand any associated concerns.

Q. Since I wrote you last the EPA has signed an MOU with the State of New Mexico. Is the intent to sign more MOU's with more states? Are there target states (like TX, OK, PA, ND, SD, WY, OH, CA)?

A. As far as I know, no other states that have communicated a desire to do so to EPA.

Let me know if you have additional questions, and whether a call with EPA about the study would be beneficial.

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel. [Personal Phone / Ex. 6]

From: Mark Wilson [mailto:mwilson@[Personal Address / Ex. 6]]
Sent: Monday, July 30, 2018 2:33 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: EPA Study of Produced Water Management

Thanks Jesse.

Since I wrote you last the EPA has signed an MOU with the State of New Mexico. Is the intent to sign more MOU's with more states?
Are there target states (like TX, OK, PA, ND, SD, WY, OH, CA)?

Mark Wilson
[Personal Address / Ex. 6]
[Personal Phone / Ex. 6]

From: Pritts, Jesse <Pritts.Jesse@epa.gov>
Sent: Monday, July 30, 2018 12:23 PM
To: Mark Wilson <mwilson@[Personal Address / Ex. 6]>
Subject: RE: EPA Study of Produced Water Management

Hi Mark – my apologies for the delayed response, but I've been waiting on our press people (they have been very busy) to give me some guidance on responding to your questions. It may take a bit longer, but I would like to get back to you with answers to your questions. Thanks for your patience.

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel. [Personal Phone / Ex. 6]

From: Mark Wilson [mailto:mwilson@[Personal Address / Ex. 6]]
Sent: Monday, July 16, 2018 9:26 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: EPA Study of Produced Water Management

Jesse :

I am the editor of Water in Oil, a newsletter published by the Produced Water Society. We are an association focused on issues surrounding produced water.

Do you have any more information that further explains the study announced on May 2nd? Is there a schedule established yet for study milestones?

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EPA's study will address questions such as how existing federal approaches to produced water management under the Clean Water Act can interact more effectively with state and tribal regulations, requirements or policy needs, and whether potential federal regulations that may allow for broader discharge of treated produced water to surface waters are supported.st

Any details on the study would be appreciated. You can email me or call at your convenience.

Thanks.

Mark Wilson

Personal Address / Ex. 6

Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 7/18/2018 1:01:38 PM
To: Drinkard, Andrea [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=808a6b7b65bf447f93dad2f510feaf61-ADRINKAR]
CC: Jan Matuszko [Matuszko.Jan@epa.gov]; Scozzafava, MichaelE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bd15262a06994ecca083bbc76cbc7080-MEScozza]; Cara Lalley [Lalley.Cara@epa.gov]; Lieberman, Paige [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a7ee44223e874dd0a74b2260f3ca7ff9-Ingram, Paige]
Subject: FW: EPA Study of Produced Water Management: Response to inquiry

Hello Andrea,

See below for an email requesting information about the OW oil and gas study for a newsletter. Cara indicated that Lee may want to review our responses before we reply. Here is a suggested response. Let me know how you would like us to proceed.

Thanks
Jesse

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

From: Mark Wilson [mailto:mwilson@] **Personal Email / Ex. 6**

Sent: Monday, July 16, 2018 9:26 AM

To: Pritts, Jesse <Pritts.Jesse@epa.gov>

Subject: EPA Study of Produced Water Management

Jesse :

I am the editor of Water in Oil, a newsletter published by the Produced Water Society. We are an association focused on issues surrounding produced water.

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Any details on the study would be appreciated. You can email me or call at your convenience.

Thanks.

Mark Wilson

Personal Email / Ex. 6

Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/31/2018 6:31:29 PM
To: Clark, Amy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e65342fadadb43e3ac26a9426ab1f9d1-Clark, Amy]; Pfeiffer, Tricia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3c7cd189c22a4b5589feaf5ef4b254f3-Pfeiffer, Tricia]
Subject: oil and gas study sharepoint

I have a sharepoint site, which I just shared with you. There's not much up there now, but one useful thing to look at is our outreach plan which lists all of the meetings and calls we have completed or are planning.

Deliberative Process / Ex. 5

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 7/31/2018 5:30:03 PM
To: Lieberman, Paige [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a7ee44223e874dd0a74b2260f3ca7ff9-Ingram, Paige]
CC: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]; Scozzafava, MichaelE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bd15262a06994ecca083bbc76cbc7080-MEScozza]; Lalley, Cara [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d3546738df1c4770b6e93128d4e5d2fb-CLalley]; Drinkard, Andrea [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=808a6b7b65bf447f93dad2f510feaf61-ADRINKAR]
Subject: RE: EPA Study of Produced Water Management: Response to inquiry

Thanks Paige – I will send out.

From: Lieberman, Paige
Sent: Tuesday, July 31, 2018 12:54 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Subject: RE: EPA Study of Produced Water Management: Response to inquiry

Hello Jesse –

Sorry for the delay. Lee reviewed these and has no comments – everything you provided is fine to print. Let me know if you need anything else.

Thanks,
Paige

Paige Lieberman
Acting Director of Stakeholder Engagement
Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Personal Phone / Ex. 6

From: Pritts, Jesse
Sent: Wednesday, July 18, 2018 9:02 AM
To: Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>; Lieberman, Paige <Lieberman.Paige@epa.gov>
Subject: FW: EPA Study of Produced Water Management: Response to inquiry

Hello Andrea,

See below for an email requesting information about the OW oil and gas study for a newsletter. Cara indicated that Lee may want to review our responses before we reply. Here is a suggested response. Let me know how you would like us to proceed.

Thanks

Jesse

Hello Mark,

Deliberative Process / Ex. 5

From: Mark Wilson [mailto:mwilson@] **Personal Email / Ex. 6**
Sent: Monday, July 16, 2018 9:26 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: EPA Study of Produced Water Management

Jesse :

I am the editor of Water in Oil, a newsletter published by the Produced Water Society. We are an association focused on issues surrounding produced water.

Do you have any more information that further explains the study announced on May 2nd? Is there a schedule established yet for study milestones?

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And can you explain what is meant by "broader discharge" in this sentence included in the 3rd paragraph?

EPA's study will address questions such as how existing federal approaches to produced water management under the Clean Water Act can interact more effectively with state and tribal regulations, requirements or policy needs, and whether potential federal regulations that may allow for broader discharge of treated produced water to surface waters are supported.st

Any details on the study would be appreciated. You can email me or call at your convenience.

Thanks.

Mark Wilson

Personal Email / Ex. 6

Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 7/18/2018 12:54:38 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: RE: EPA Study of Produced Water Management

Looks like Paige is also out this week, so I'll send to Andrea.

From: Matuszko, Jan
Sent: Wednesday, July 18, 2018 8:52 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Re: EPA Study of Produced Water Management

This works well. Go ahead and send to Paige with a cc to me, Scozz, and Cara.

Thanks!

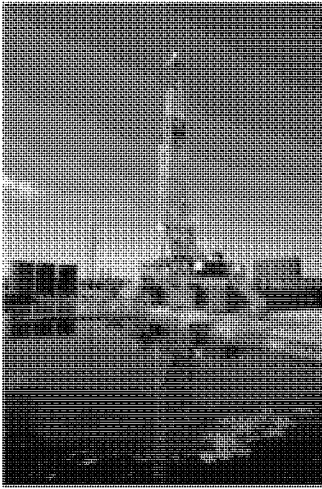
From: Pritts, Jesse
Sent: Wednesday, July 18, 2018 8:44 AM
To: Matuszko, Jan
Subject: RE: EPA Study of Produced Water Management

Thanks Jan for reviewing this. Good point on only mentioning 435 (and not 437). I weaved in some additional language. Updated text is below. If this looks good, I can send to Paige.

Agree on web site updates – I will work on those.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5



Study of Oil and Gas Extraction Wastewater Management ...

www.epa.gov

EPA is embarking on a new study that will take a holistic look at how the Agency, states and stakeholders regulate and manage wastewater from the oil and gas industry. Large volumes of wastewater are generated in the oil and gas industry, and projections show that these volumes will only increase ...

Deliberative Process / Ex. 5

From: Mark Wilson [mailto:mwilson@] **Personal Email / Ex. 6**
Sent: Monday, July 16, 2018 9:26 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: EPA Study of Produced Water Management

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Any details on the study would be appreciated. You can email me or call at your convenience.

Thanks.

Mark Wilson


Personal Email / Ex. 6

Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/8/2018 3:38:59 PM
To: Clark, Amy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e65342fadadb43e3ac26a9426ab1f9d1-Clark, Amy]; Karen Milam (Milam.Karen@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]; Pfeiffer, Tricia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3c7cd189c22a4b5589feaf5ef4b254f3-Pfeiffer, Tricia]
Subject: FW: Study of Oil and Gas Extraction Wastewater Management
Attachments: ATT00001.txt

Hi Amy and Trish – are you familiar with this group?

From: Christine Dougherty [mailto:CDougherty@
Sent: Tuesday, May 08, 2018 11:15 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Study of Oil and Gas Extraction Wastewater Management

Dear Jesse Pritts,

I am reaching out to you today in response to the recent article published on the EPA's website called "Study of Oil and Gas Extraction Wastewater Management". As Adams County's Local Government Designee for the Colorado Oil and Gas Conservation Commission and liaison for our residence the disposal of wastewater from fracking activities is of particular interest to me, as is the potential to recycle the water for reuse by industry or other potential uses which may be identified.

Where can I find out more information about the study, such as;

- Who are stakeholders in the study
- Progress of the study
- Will you be taking comments from stakeholders
- How can interested stakeholders participate

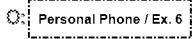
I greatly appreciate your time and response.

Sincerely,



Christine Dougherty
Oil & Gas Liaison, Community & Economic Development Department

Personal Address / Ex. 6

 [!\[\]\(c8d5e2ee847d658b2a7eb88bf9ce84ac_img.jpg\)](mailto:cdougherty@)

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 10/10/2018 7:29:24 PM
To: Adam Shamsi [ashamsi@ [Personal Email / Ex. 6]]
CC: Frederick Douglas [frederickdouglas@ [Personal Email / Ex. 6]]; Holly Hudson [hhudson@ [Personal Email / Ex. 6]]
Subject: RE: Contact with Fred Douglas from Cosmos at Public Meeting on Oil and Gas Wastewater 10/9/18

Hi Adam – I'll look to see if I can identify a contact for you. I'm not familiar with that program, so it will take a bit of digging. If you don't hear from me within a couple of days, please do check in again.

=====

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
Office of Water | Office of Science and Technology
te [Personal Phone / Ex. 6]
email: pritts.jesse@epa.gov
<https://www.epa.gov/eg>

From: Adam Shamsi [mailto:ashamsi@ [Personal Email / Ex. 6]]
Sent: Wednesday, October 10, 2018 9:29 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: Frederick Douglas <frederickdouglas@ [Personal Email / Ex. 6]>; Holly Hudson <hhudson@ [Personal Email / Ex. 6]>
Subject: Contact with Fred Douglas from Cosmos at Public Meeting on Oil and Gas Wastewater 10/9/18

Hello Jesse,

My name is Adam Shamsi, I work with Fred Douglas at Cosmos Technologies. You had met him yesterday at the public meeting on oil and gas wastewater management. He had spoken with you about our patented technology for the treatment of wastewater and our hopes to perform further research and testing.

Fred mentioned you had said that there is someone at the EPA for small business innovative research who we can get in touch with. If you can kindly send me the contact information for this person I would greatly appreciate it.

Looking forward to your response.

Thanks

Adam Shamsi
Cosmos Technologies Inc.

[Personal Phone / Ex. 6]

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/21/2018 12:14:44 PM
To: Flanders, Phillip [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0cb247ef96f642f98cb727a9ed48e49e-Flanders, P]
Subject: RE: oil and gas study update

What's your timing for publishing this? We plan to be done with our study early 2019.

From: Flanders, Phillip
Sent: Thursday, September 20, 2018 4:53 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: oil and gas study update

This, right? I think this is fine. Unless you want to use this a venue to solicit comment, which you could say here.

From: Pritts, Jesse
Sent: Thursday, September 13, 2018 3:30 PM
To: Flanders, Phillip <Flanders.Phillip@epa.gov>
Subject: oil and gas study update

Here's the current status of the oil and gas study. Let me know your thoughts on this:

The EPA is conducting a study evaluating management of produced water from oil and gas extraction activities under the Clean Water Act. The goal of the study is to understand if broader discharge of treated produced waters to Waters of the United States is supported. A key component of the study is to engage with stakeholders (including states, tribes, industry, academia and NGOs) to understand their experience and perspective on topics surrounding produced water management. The Agency conducted outreach with stakeholders from May through September, 2018 through a series of meetings and conference calls. The Agency held a public meeting in October, 2018 to report on what we learned. The Agency is currently drafting a white paper that can be used to inform next steps.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/12/2018 12:52:31 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: RE: Draft Oil and Gas Study Comm Plan

I will circulate a draft today.

From: Matuszko, Jan
Sent: Thursday, April 12, 2018 8:04 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Draft Oil and Gas Study Comm Plan

What's the ETA on a draft plan?

Jan Matuszko
Chief, Engineering and Analytical Support Branch
Office of Water
Environmental Protection Agency

Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 7/18/2018 12:44:07 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: RE: EPA Study of Produced Water Management

Deliberative Process / Ex. 5

Agree on web site updates – I will work on those.

Hello Mark,

Deliberative Process / Ex. 5

From: Mark Wilson [mailto:mwilson@] **Personal Email / Ex. 6**
Sent: Monday, July 16, 2018 9:26 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: EPA Study of Produced Water Management

Jesse :

I am the editor of Water in Oil, a newsletter published by the Produced Water Society. We are an association focused on issues surrounding produced water.

Do you have any more information that further explains the study announced on May 2nd? Is there a schedule established yet for study milestones?

On the EPA's web site that describes the study, "stakeholder" are referred to several times. Who are these stakeholders?

The term "available approaches" to manage wastewater is also referred to. Are these "available approaches" delineated anywhere?

And can you explain what is meant by "broader discharge" in this sentence included in the 3rd paragraph?

EPA's study will address questions such as how existing federal approaches to produced water management under the Clean Water Act can interact more effectively with state and tribal regulations, requirements or policy needs, and whether potential federal regulations that may allow for broader discharge of treated produced water to surface waters are supported.st

Any details on the study would be appreciated. You can email me or call at your convenience.

Thanks.

Mark Wilson

Personal Email / Ex. 6

Personal Phone / Ex. 6

Appointment

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/8/2018 3:01:37 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: Accepted: API Upstream Group/Oil and Gas Study
Location: DCRoomWest6231F/DC-CCW-OST
Start: 5/15/2018 2:30:00 PM
End: 5/15/2018 3:30:00 PM
Show Time As: Busy

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/10/2018 11:40:14 AM
To: Jan Matuszko [Matuszko.Jan@epa.gov]
Subject: oil and gas study presentation
Attachments: EPA Oil and Gas Study October 9 2018 Public Meeting.pptx

I still need to complete the NGO slide and add in our conclusions, but it won't take much to do that. We can talk about the appropriate level of background. I expect the current background slides to take maybe 10 mins. to present.

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 6/21/2018 2:11:09 AM
To: Lorrie Council [lorrie.council@Personal Email / Ex. 6]
Subject: FW: Alliance/EPA Produced Water Mtg/Thursday, June 21
Attachments: June 21 EPA Meeting (5).xlsx; Study of Oil and Gas Extraction Wastewater Management.docx

FYI – info on tomorrow morning meeting.

From: bill@Personal Email / Ex. 6 [mailto:bill@Personal Email / Ex. 6]
Sent: Monday, June 18, 2018 11:38 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: John Tintera <johnt@Personal Email / Ex. 6>
Subject: Alliance/EPA Produced Water Mtg/Thursday, June 21

Attached please find a nearly complete AGENDA for Thursday's meeting, as well as a current list of RSVP's.

We expect to have more from our water committee and other operator members to respond this week.

Bill Stevens
TX Alliance of Energy Producers

Personal Address / Ex. 6

Cell: Personal Phone / Ex. 6
bill@Personal Email / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 10/10/2018 1:34:42 PM
To: Justin Nobel [justinnobel@Personal Address / Ex. 6]
Subject: RE: Rolling Stone Journalist at EPA Public Meeting on Oil & Gas Wastewater Management following up with Questions..

Thanks Justin for reaching out. You can find a copy of the presentation on our web page here:

<https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>

Tricia and the press office will coordinate responses to your questions.

Best regards,
Jesse

=====

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
Office of Water | Office of Science and Technology
tel. Personal Phone / Ex. 6
email. pritts.jesse@epa.gov
<https://www.epa.gov/eg>

From: Justin Nobel [mailto:justinnobel@gmail.com]
Sent: Wednesday, October 10, 2018 7:11 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: Lynn, Tricia <lynn.tricia@epa.gov>; Forsgren, Lee <Forsgren.Lee@epa.gov>
Subject: Rolling Stone Journalist at EPA Public Meeting on Oil & Gas Wastewater Management following up with Questions..

Dear Jesse,

It was nice to meet yesterday at the EPA meeting on Oil & Gas Extraction Wastewater Management. As I may have mentioned, I write on issues of science and the environment for Popular Mechanics, National Geographic and a number of other US publications, and presently I am working on a story for Rolling Stone magazine that will focus on some of the issues connected to oil and gas wastewater, including the topic of radioactivity. First off, I am just wondering if you can pass along a copy of the PowerPoint presentation you gave at the meeting? There was a lot of great information in the presentation, and it would be helpful to have it all organized in one place.

Below I have laid out a few questions that were inspired by EPA's public meeting as well as my familiarity with past EPA reports on this topic. I have CCed Press Officer Tricia Lynn, who has been helpful in handling questions I have on this issue. I have also CCed Deputy Assistant Administrator Lee Forsgren. If possible, it would be great to have a phone conversation (with Jesse) early next week, but I understand you have a busy schedule. If a talk by phone is not possible then I am hoping EPA can answer my Questions via email. My Questions are below. Thank you again to everyone for your time and attention:

1. EPA's recent paper on Centralized Waste Treatment facilities, "[Detailed Study of the Centralized Waste Treatment Point Source Category for Facilities Managing Oil and Gas Extraction Wastes](#)" was extremely informative and very helpful for my present story. I was impressed by the detailed nature of the report, which pointed out several significant issues with CWTs, including that their present permits are often too limited given

the complex nature of their operations and discharges, and that many CWTs are actually running on outdated permits, and that these facilities can often enable the discharges of worrisome contaminants into the the environment, including ones that may seriously jeopardize human health—"Documented and potential impacts to both aquatic life and human health related to discharges from CWT facilities treating oil and gas extraction wastewater exist due to the prevalence of some pollutants... CWT effluents have been shown to adversely affect downstream aquatic life... Multiple drinking water intakes are situated downstream of CWTs accepting oil and gas extraction wastewater within distances at which impacts to drinking water from CWTs have previously been identified." It would appear from the well-researched conclusions of this paper that CWTs are already failing to adequately process the massive streams of oil and gas wastewater they are receiving, and thus I am wondering, given this paper's conclusions, how is it possible for EPA, an agency with a core mission of "protecting human health and the environment" to—and here I am quoting words from yesterday's EPA public meeting—"support regulations that would broaden discharge of oil and gas extraction wastewater to surface waters"? And just to repeat the main thrust of my Question here: EPA's previously-mentioned CWT report presents a powerful case for enacting much stricter regulations over facilities that process oil and gas wastewater, thus I am wondering in the face of such agency-produced analysis, how could EPA possibly decide that the appropriate decision is to broaden discharges of oil and gas extraction wastewater to surface waters?

2. One of the main issues my story with Rolling Stone magazine will focus on is the radioactive content of oil and gas wastewater. I know this radioactivity is very difficult to remove from the waste stream and presents numerous challenges to operators, yet at no point during yesterday's public meeting on oil and gas wastewater did EPA mention or acknowledge the radioactivity of oil and gas wastewater—Why did EPA not mention the radioactive content of oil and gas wastewater at yesterday's public meeting? Does EPA believe the radioactive content of oil and gas extraction wastewater is a significant issue? Or perhaps EPA believes that the radioactive content of oil and gas extraction wastewater is an issue that is not so significant?

3. Lastly, What federal agency is charged with ensuring oil and gas industry workers, the general public, and the environment are protected from the radioactivity brought to the surface by both conventional and unconventional oil and gas development? In essence, who manages and regulates the radioactivity generated by the oil and gas industry?

I have run this Question by officials at both OSHA and NIOSH (National Institute for Occupational Safety and Health, within the CDC) as well as folks connected to the Nuclear Regulatory Commission, and it appears that there is actually no federal agency specifically tasked with addressing radiation and radioactivity issues in the oil and gas industry..? I am wondering if I am correct in that determination? If that is not the case then please do let me know, And please let me know which agency, either within EPA (perhaps the Office of Air and Radiation..?) or outside of EPA, would be appropriate to contact on this topic?

Thank you again.

Sincerely,
Justin

--

Justin Nobel

Personal Phone / Ex. 6

Personal Address / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/12/2018 12:35:22 PM
To: Flanders, Phillip [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0cb247ef96f642f98cb727a9ed48e49e-Flanders, P]
Subject: communications plan

Do you have a draft comms plan for 304m that I could look at as a model for developing one for the oil and gas study?
Thanks

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 6/21/2018 2:01:31 AM
To: David Galindo [david.galindo@Personal Address / Ex. 6]
Subject: FW: Alliance/EPA Produced Water Mtg/Thursday, June 21
Attachments: June 21 EPA Meeting (5).xlsx; Study of Oil and Gas Extraction Wastewater Management.docx

From: bill@Personal Address / Ex. 6 [mailto:bill@Personal Address / Ex. 6]
Sent: Monday, June 18, 2018 11:38 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: John Tintera <johnt@Personal Address / Ex. 6>
Subject: Alliance/EPA Produced Water Mtg/Thursday, June 21

Attached please find a nearly complete AGENDA for Thursday's meeting, as well as a current list of RSVP's.

We expect to have more from our water committee and other operator members to respond this week.

Bill Stevens
TX Alliance of Energy Producers

Personal Address / Ex. 6

Cell: Personal Phone / Ex. 6
bill@Personal Address / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/20/2018 5:21:01 PM
To: Jan Matuszko [Matuszko.Jan@epa.gov]; Feret, Karen (Milam) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]
Subject: revised public meeting presentation

<!--[if lte mso 15 || CheckWebRef]-->

Pritts, Jesse has shared a OneDrive for Business file with you. To view it, click the link below.

Deliberative Process / Ex. 5

<!--[endif]-->

Here's a revised presentation. I'll add some photos, etc. to jazz it up. I slightly revised the agenda and the order of the presentation. I don't think it will be a problem to get through all of this in one hour, but I'll have a better feel once I run through it. We can cut some of the background if necessary. Jan, I did not include the data needs slide you proposed. There's just no bandwidth for dealing with data right now and I don't think it's necessary to make the policy decision about next steps. Happy to discuss.

I won't be at the meeting with Lee next week as I'll be in PA meetings. One question we may get from Lee is whether we are doing any Q&A on the materials we present. I'm up for doing that, either by carving out 15 minutes of our presentation, or after all participants have had their chance to give their comments. We did a lot of Q&A at our Texas Alliance meeting, and I think it was helpful for the attendees to have the opportunity to get clarification on the program, study goals, etc. Just something to keep in mind if it comes up – I'm agnostic on it.

Proposed agenda:

Deliberative Process / Ex. 5

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/12/2018 12:31:34 PM
To: Karen Milam (Milam.Karen@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]
Subject: FW: Draft Oil and Gas Study Comm Plan

Guess I'm supposed to develop this. Do you have a comms plan you did for UOG?

From: Matuszko, Jan
Sent: Thursday, April 12, 2018 8:04 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Draft Oil and Gas Study Comm Plan

What's the ETA on a draft plan?

Jan Matuszko
Chief, Engineering and Analytical Support Branch
Office of Water
Environmental Protection Agency

Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 6/20/2018 10:39:00 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
CC: Kenney, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ce6ff86939e44da49d88840b2353f022-Kenney, James]; Karen Milam (Milam.Karen@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]
Subject: RE: Oil and Gas Study Data needs

In concept, yes. But, we should chat about data before we formally request anything as I'm concerned about Karen and I having the bandwidth to look at data at this point. One thing that would be helpful, and we've been more direct with producers about this lately, are specific examples of where they are running up against constraints on injection. While anecdotal information is helpful, I'm not sure it's convincing. So, I think that should be our primary ask at this point. I'm not as concerned, frankly, about characterization data or treatment tech data at this point. We can look at that down the road. Incidentally, producers we've talked to on this trip have been reluctant to offer specifics about where they are seeing UIC capacity limitations as they don't want to spook their investors. But perhaps the trade associations could help with this – something to talk to API, IPAA, AXPC, etc about. Those are initial thoughts.

From: Matuszko, Jan
Sent: Wednesday, June 20, 2018 10:02 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: Kenney, James <Kenney.James@epa.gov>
Subject: Oil and Gas Study Data needs

Jesse,

We keep getting asked what data needs we have as part of our study. I think we would welcome data related to on-shore oil and gas extraction (both conventional and unconventional) related to the following:

- 1) Produced water wastewater characteristics – flowback and long-term
- 2) Any testing or data they have on technologies evaluated to treat produced water – any pilot studies?
- 3) Any data related to limitations of UIC capacity or recycling

Do you agree or have other suggested data needs?

Jan Matuszko
Chief, Engineering and Analytical Support Branch
Office of Water
Environmental Protection Agency

Personal Phone / Ex. 6

Appointment

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/20/2018 5:03:38 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: Accepted: Oil and Gas Study Discussion
Location: DCRoomWest6231F/DC-CCW-OST

Start: 10/10/2018 1:00:00 PM
End: 10/10/2018 7:00:00 PM
Show Time As: Busy

Appointment

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/7/2018 12:09:11 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: Accepted: Oil and Gas Study
Location: DCRoomWest6231V/DC-CCW-OST
Start: 5/7/2018 2:00:00 PM
End: 5/7/2018 2:45:00 PM
Show Time As: Busy

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 8/15/2018 2:32:13 PM
To: Kenney, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ce6ff86939e44da49d88840b2353f022-Kenney, James]; Pfeiffer, Tricia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3c7cd189c22a4b5589feaf5ef4b254f3-Pfeiffer, Tricia]; Clark, Amy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e65342fadadb43e3ac26a9426ab1f9d1-Clark, Amy]
Subject: oil and gas public meeting

FYI we've selected a date for our oil and gas study public meeting. The meeting will be on 10/9. You three should plan to attend if you are able. I know this means traveling on Columbus day, but the 9th was the day that worked for David Ross et. al. Jan has also suggested that you all should plan to spend an extra day in DC so that we can spend Wednesday debriefing, etc. and talk about next steps. Jan has travel \$ set aside for all three of you, so you should get your TA's in very soon for that if you are able to come. Jan is working with OW communications staff on comms. to announce the meeting, so stay tuned for that. Thanks, and let me know if you have questions.

Appointment

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 1/22/2018 6:54:31 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: Accepted: CWA Oil and Gas Wastewater Related Activities
Start: 1/26/2018 6:00:00 PM
End: 1/26/2018 7:00:00 PM
Show Time As: Busy

Appointment

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/20/2018 12:29:15 PM
To: Forsgren, Lee [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a055d7329d5b470fbaa9920ce1b68a7d-Forsgren, D]
Subject: Accepted: Oil and Gas Wastewater Study Public Meeting ***TO BE RESCHEDULED***
Location: 3233 WJCE Call in passcode
Start: 9/25/2018 8:00:00 PM
End: 9/25/2018 8:30:00 PM
Show Time As: Busy

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/11/2018 6:57:45 PM
To: Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]
Subject: RE: Oil and Gas Study

OK – I asked Rob to keep the Monday time open so if they don't meet with LDEQ we can have a call. I'll keep you informed of where we end up. Are you working Friday 4/20?
Thanks

From: Matuszko, Jan
Sent: Wednesday, April 11, 2018 2:55 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: FW: Oil and Gas Study

Nonresponsive Discussion of Personal Matters / Ex. 6

From: Lawrence, Rob
Sent: Wednesday, April 11, 2018 2:02 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>; Larsen, Brent <Larsen.Brent@epa.gov>; Okpala, Maria <Okpala.Maria@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Milam, Karen <Milam.Karen@epa.gov>; Kenney, James <Kenney.James@epa.gov>
Subject: RE: Oil and Gas Study

Jesse – can we move this call until Wednesday, April 18, maybe 2:00 Eastern? We are waiting on a call set up by LDEQ on a different issue and I gave them Monday and Tuesday afternoons as options.

Rob Lawrence
Region 6
Policy Advisor - Energy Issues
Personal Phone / Ex. 6

-----Original Appointment-----

From: Pritts, Jesse
Sent: Wednesday, April 11, 2018 12:47 PM
To: Lawrence, Rob; Larsen, Brent; Okpala, Maria; Matuszko, Jan; Milam, Karen; Kenney, James
Subject: Oil and Gas Study
When: Monday, April 16, 2018 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: DCRoomWest6231V/DC-CCW-OST

Catch up on oil and gas related topics in advance of OW's trip to New Mexico April 24 and 25 to meet with stakeholders.

Join by Phone

Toll number: Personal Phone / Ex. 6
[Find a local number](#)

Conference ID: Personal Phone / Ex. 6

[Help](#)

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 7/30/2018 2:19:29 PM
To: Cara Lalley [Lalley.Cara@epa.gov]
Subject: FW: EPA Study of Produced Water Management: Response to inquiry

Hi Cara – this didn't get taken care of the week of 7/16, and I was out last week so am now getting back to this. Let me know if I can respond to Mark's email or if we need to run this by folks first.

Thanks

From: Pritts, Jesse
Sent: Wednesday, July 18, 2018 9:02 AM
To: Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Cc: Jan Matuszko <Matuszko.Jan@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>; Cara Lalley <Lalley.Cara@epa.gov>; Lieberman, Paige <Lieberman.Paige@epa.gov>
Subject: FW: EPA Study of Produced Water Management: Response to inquiry

Hello Andrea,

See below for an email requesting information about the OW oil and gas study for a newsletter. Cara indicated that Lee may want to review our responses before we reply. Here is a suggested response. Let me know how you would like us to proceed.

Thanks

Jesse

Hello Mark,

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

From: Mark Wilson [mailto:mwilson@] **Personal Email / Ex. 6**
Sent: Monday, July 16, 2018 9:26 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: EPA Study of Produced Water Management

Jesse :

I am the editor of Water in Oil, a newsletter published by the Produced Water Society. We are an association focused on issues surrounding produced water.

Do you have any more information that further explains the study announced on May 2nd? Is there a schedule established yet for study milestones?

On the EPA's web site that describes the study, "stakeholder" are referred to several times. Who are these stakeholders?

The term "available approaches" to manage wastewater is also referred to. Are these "available approaches" delineated anywhere?

And can you explain what is meant by "broader discharge" in this sentence included in the 3rd paragraph?

EPA's study will address questions such as how existing federal approaches to produced water management under the Clean Water Act can interact more effectively with state and tribal regulations, requirements or policy needs, and whether potential federal regulations that may allow for broader discharge of treated produced water to surface waters are supported.st

Any details on the study would be appreciated. You can email me or call at your convenience.

Thanks.

Mark Wilson

Personal Email / Ex. 6

Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 10/5/2018 5:31:10 PM
To: Clark, Amy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e65342fadadb43e3ac26a9426ab1f9d1-Clark, Amy]; Pfeiffer, Tricia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3c7cd189c22a4b5589feaf5ef4b254f3-Pfeiffer, Tricia]; Kenney, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ce6ff86939e44da49d88840b2353f022-Kenney, James]; Robert Wood [Wood.Robert@epa.gov]; Deborah Nagle (Nagle.Deborah@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33888a2bbe8f48aeb4ad9cc54259fb4e-dnagle]; Feret, Karen (Milam) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]; Jan Matuszko [Matuszko.Jan@epa.gov]; Scozzafava, MichaelE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bd15262a06994ecca083bbc76cbc7080-MEScozza]
Subject: PowerPoint for public meeting
Attachments: EPA Oil and Gas Study October 9 2018 Public Meeting 10052018.pptx

Hi Everyone – here's the latest version of the PowerPoint for the public meeting next week. If you see any typos/etc. let me know and I can correct. Looking forward to it!

Thanks, and have a great holiday weekend and safe travels to those coming to DC.
Jesse

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 10/16/2018 12:01:23 PM
To: Adam Shamsi [ashamsi@**Personal Email / Ex. 6**]
CC: Frederick Douglas [frederickdouglas@**Personal Email / Ex. 6**]; Holly Hudson [hhudson@**Personal Email / Ex. 6**]
Subject: RE: Contact with Fred Douglas from Cosmos at Public Meeting on Oil and Gas Wastewater 10/9/18

Hi Adam – I could not find a specific contact person, but there is a web page with a “Contact Us” link. You should try that and someone should get back to you.

<https://www.epa.gov/sbir/forms/contact-us-about-small-business-innovation-research-sbir-program>

Regards,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
Office of Water | Office of Science and Technology
tel. **Personal Phone / Ex. 6**
email. pritts.jesse@epa.gov
<https://www.epa.gov/eg>

From: Adam Shamsi [mailto:ashamsi@**Personal Email / Ex. 6**]
Sent: Monday, October 15, 2018 4:50 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: Frederick Douglas <frederickdouglas@**Personal Email / Ex. 6**>; Holly Hudson <hhudson@**Personal Email / Ex. 6**>
Subject: RE: Contact with Fred Douglas from Cosmos at Public Meeting on Oil and Gas Wastewater 10/9/18

Hi Jesse,

I was just following up on this and seeing if you were able to find out the contact information for the person at the small business innovative research program?

Thanks!

Adam Shamsi

From: Adam Shamsi
Sent: Wednesday, October 10, 2018 3:39 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: Frederick Douglas <frederickdouglas@**Personal Email / Ex. 6**>; Holly Hudson <hhudson@**Personal Email / Ex. 6**>
Subject: RE: Contact with Fred Douglas from Cosmos at Public Meeting on Oil and Gas Wastewater 10/9/18

Thank you very much Jesse. I will check back with you on Monday if I do not hear back by then. We really appreciate your assistance with this.

Adam

From: Pritts, Jesse <Pritts.Jesse@epa.gov>
Sent: Wednesday, October 10, 2018 3:29 PM
To: Adam Shamsi <ashamsi@ [Personal Email / Ex. 6] >
Cc: Frederick Douglas <frederickdouglas@ [Personal Email / Ex. 6] >; Holly Hudson <hhudson@ [Personal Email / Ex. 6] >
Subject: RE: Contact with Fred Douglas from Cosmos at Public Meeting on Oil and Gas Wastewater 10/9/18

Hi Adam – I'll look to see if I can identify a contact for you. I'm not familiar with that program, so it will take a bit of digging. If you don't hear from me within a couple of days, please do check in again.

=====

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
Office of Water | Office of Science and Technology
tel. [Personal Phone / Ex. 6]
email. pritts.jesse@epa.gov
<https://www.epa.gov/eg>

From: Adam Shamsi [mailto:ashamsi@ [Personal Email / Ex. 6]]
Sent: Wednesday, October 10, 2018 9:29 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Cc: Frederick Douglas <frederickdouglas@ [Personal Email / Ex. 6] >; Holly Hudson <hhudson@ [Personal Email / Ex. 6] >
Subject: Contact with Fred Douglas from Cosmos at Public Meeting on Oil and Gas Wastewater 10/9/18

Hello Jesse,

My name is Adam Shamsi, I work with Fred Douglas at Cosmos Technologies. You had met him yesterday at the public meeting on oil and gas wastewater management. He had spoken with you about our patented technology for the treatment of wastewater and our hopes to perform further research and testing.

Fred mentioned you had said that there is someone at the EPA for small business innovative research who we can get in touch with. If you can kindly send me the contact information for this person I would greatly appreciate it.


Looking forward to your response.

Thanks


Adam Shamsi
Cosmos Technologies Inc.

[Personal Phone / Ex. 6]

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 5/29/2018 3:04:04 PM
To: Dan Mueller [dmueller@
Subject: RE: Meeting in Austin in June

Thanks Dan – just left you a voicemail. I'm free today as well if you want to give a call.
Thanks

From: Dan Mueller [mailto:dmueller@
Sent: Tuesday, May 29, 2018 10:47 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: FW: Meeting in Austin in June

A quick follow-up. Realize it may be hard for the EPA group to both travel and have meetings on Monday (18th) so we are exploring if we free up Tuesday AM.

Thanks,
Dan

From: Dan Mueller
Sent: Tuesday, May 29, 2018 9:36 AM
To: 'Pritts, Jesse'
Subject: RE: Meeting in Austin in June

Jesse:

For us, Monday the 18th works best (can be available anytime that day), alternatively the afternoon of the 19th (our second choice but the team has a commitment that AM that will tie u up till noon). I am also available later in the week but Scott is not it would be very beneficial if he could participate.

We would like to have a one-on-one meeting with the EPA team but are also open to helping and possibly hosting a broader NGO meeting that week as well. How about we talk about logistics of trying to do both early in the week (same day? – maybe not) including your thoughts on the appropriate length of the meetings (possibly driving the need to having the meetings on separate days).

I am around this week and can jump on the phone.

Thanks,
Dan

Dan Mueller, P.E.
Director, Oil and Gas Exploration and Production

Environmental Defense Fund

Personal Address / Ex. 6

Personal Phone / Ex. 6

Personal Phone / Ex. 6
DMueller@
Personal Address / Ex. 6

From: Pritts, Jesse [mailto:Pritts.Jesse@epa.gov]
Sent: Thursday, May 24, 2018 9:35 AM
To: Dan Mueller; Scott Anderson
Subject: Meeting in Austin in June

Hi Scott and Dan – we are planning to travel to Austin to meet with various stakeholders on the oil and gas study in June. Would you be interested in an in-person meeting with the EPA team to discuss the study? We are tentatively looking at the week of June 18. Let me know if you would like to meet. Here's a bit more description of the study and specific topics we are interested in discussing.

Our produced water study will take a holistic look at how EPA, states and stakeholders regulate and manage wastewater from the oil and gas industry. During the study, EPA intends to engage with stakeholders to evaluate approaches to manage both conventional and unconventional oil and gas extraction wastewater from onshore facilities including, but not limited to, an assessment of technologies for facilities that treat and discharge oil and gas extraction wastewater. More information is now available online at : <https://www.epa.gov/eg/study-oil-and-gas-extraction-wastewater-management>.

To help frame discussions, we are providing stakeholders with a list of discussion topics:

1. Produced water management - pros/cons with the status quo.
2. Produced water management alternative options - technologies, availability, drivers, etc.
3. Current or future produced water management barriers to alternatives.
4. Concerns related to federal regulations that allow for the discharge of treated produced water to surface waters and/or to municipal wastewater treatment.
5. Challenges to permitting facilities that treat and discharge produced waters.
6. Appropriate level of treatment required for produced waters that will be discharged to surface waters and/or Publicly Owned Treatment Works (POTWs).
7. Existing state regulations/requirements that conflict with a different federal approaches to produced water management (e.g., water rights).

Recognizing there may be other relevant areas of discussion not covered above, we encourage stakeholders to bring such topics to our attention. We welcome individual feedback from states, tribes, industry, etc. on the produced water study.

Thanks,

Jesse W. Pritts, P.E.
United States Environmental Protection Agency
tel Personal Phone / Ex. 6

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 4/11/2018 6:45:40 PM
To: Lawrence, Rob [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b22505b64aee401eba1a31e9b50f61d1-Lawrence, Rob]
Subject: RE: Oil and Gas Study

Yeah, no worries. Just let me know once you hear something. I'll work around your schedule next week. I can also catch up with everyone individually if we can't find a time that works for everyone. Thanks for being flexible.

From: Lawrence, Rob
Sent: Wednesday, April 11, 2018 2:43 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Oil and Gas Study

Unfortunately, the LDEQ contact is an assistant secretary and he told me that he would be tied up at the state legislature the next 2 days (Wednesday and Thursday this week) and why he asked to have our conference call next week. Unless he gets bored in the state capitol hearing room, I don't think I will hear from him again until Friday.

Unless Brent and Maria are not available, go ahead with Monday.

Rob Lawrence
Region 6
Policy Advisor - Energy Issues
Personal Phone / Ex. 6

From: Pritts, Jesse
Sent: Wednesday, April 11, 2018 1:38 PM
To: Lawrence, Rob <Lawrence.Rob@epa.gov>
Subject: RE: Oil and Gas Study

No, not yet – they're probably waiting to hear as well. Let me know once you've got a time with them and I'll work from that.

Thanks

From: Lawrence, Rob
Sent: Wednesday, April 11, 2018 2:36 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: Oil and Gas Study

Have you heard from Brent and/or Maria? They are to be on the LDEQ call too.

Otherwise I can do the Monday time slot.

Rob Lawrence
Region 6
Policy Advisor - Energy Issues
Personal Phone / Ex. 6

From: Pritts, Jesse
Sent: Wednesday, April 11, 2018 1:18 PM
To: Lawrence, Rob <Lawrence.Rob@epa.gov>
Subject: RE: Oil and Gas Study

Hi Rob – calendars are pretty tight next week as Jan is booked Tuesday and is out Wednesday and Thursday. I am out most of Wednesday as well. Can we keep it tentative for Monday, and if you end up having a conflict with LDEQ I can try to figure out something else or work around your call?
Thanks

From: Lawrence, Rob
Sent: Wednesday, April 11, 2018 2:02 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>; Larsen, Brent <Larsen.Brent@epa.gov>; Okpala, Maria <Okpala.Maria@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Milam, Karen <Milam.Karen@epa.gov>; Kenney, James <Kenney.James@epa.gov>
Subject: RE: Oil and Gas Study

Jesse – can we move this call until Wednesday, April 18, maybe 2:00 Eastern? We are waiting on a call set up by LDEQ on a different issue and I gave them Monday and Tuesday afternoons as options.

Rob Lawrence
Region 6
Policy Advisor - Energy Issues
[Personal Phone / Ex. 6](#)

-----Original Appointment-----

From: Pritts, Jesse
Sent: Wednesday, April 11, 2018 12:47 PM
To: Lawrence, Rob; Larsen, Brent; Okpala, Maria; Matuszko, Jan; Milam, Karen; Kenney, James
Subject: Oil and Gas Study
When: Monday, April 16, 2018 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: DCRoomWest6231V/DC-CCW-OST

Catch up on oil and gas related topics in advance of OW's trip to New Mexico April 24 and 25 to meet with stakeholders.

Join by Phone

Toll number [Personal Phone / Ex. 6](#)
[Find a local number](#)

Conference ID: [Personal Phone / Ex. 6](#)

[Help](#)

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 7/5/2018 6:37:01 PM
To: Jan Matuszko [Matuszko.Jan@epa.gov]; Scozzafava, MichaelE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bd15262a06994ecca083bbc76cbc7080-MEScozza]
CC: Karen Milam (Milam.Karen@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85e7994149ae4037b154cec4fee82d5d-KMilam]
Subject: FW: Concur Itinerary 08/20/2018: OIL AND GAS MEETINGS OKLAHOMA CITY (T4X3XM)
Attachments: IAD-OKC.ics; OKC-IAD.ics

Since I will be out next week, I went ahead and put in a TA for Oklahoma City for August 20-24 for the oil and gas project.

From: Concur Travel [mailto:TravelWizard@concursolutions.com]
Sent: Thursday, July 05, 2018 2:26 PM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: Concur Itinerary 08/20/2018: OIL AND GAS MEETINGS OKLAHOMA CITY (T4X3XM)

Trip Overview

Trip Name: Oil and Gas Meetings Oklahoma City
Start Date: August 20, 2018
End Date: August 24, 2018
Created: July 05, 2018, JESSE PRITTS (Modified: July 05, 2018)
Description: Oil and gas study meetings in Oklahoma City.
Trip Purpose: 2-INFORMATIONAL MEETING
Agency Record Locator: T4X3XM
Passengers: Jesse W Pritts
Total Estimated Cost: \$1,166.44 USD

Important: Reservations must be approved and ticketed no later than: 08/18/2018 3:15 PM Eastern
The trip will be automatically cancelled if it is not approved before the deadline.

Agency Name: BCD_EPA

Reservations

Monday, August 20, 2018



Flight Washington, DC (IAD) to Oklahoma City, OK (OKC)

United 6341

Operated by: MESA AIRLINES DBA UNITED EXPRESS

Departure: 05:15 PM

Seat: 16B (Confirmed)

Washington Dulles Intl Airport (IAD)

Duration: 3 hours, 2 minutes

Nonstop

Arrival: 07:17 PM

Oklahoma City Will Rogers Airport (OKC)

Additional Details

Aircraft: E7W

E-Ticket

Confirmation: IQD4FH

Status: Confirmed

Distance: 1133 miles

Emissions: 441.9 lbs CO₂

Cabin: Economy (S)

Meal: Meal at Cost

**Enterprise Car Rental at: Oklahoma City US (OKC)**

Pick-up at: Oklahoma City US (OKC)

Pick Up: 07:17 PM Mon Aug 20

Pick-up at: Oklahoma City US (OKC)

Number of Cars: 1

Confirmation: 1041978270COUNT

Status: Confirmed

Frequent Guest Number: HJPHR6P

Rate Code: EM3

Return: 07:45 AM Fri Aug 24

Returning to: Oklahoma City US (OKC)

Additional Details

Rate: \$52.00 USD daily rate, unlimited miles

Total Rate: \$308.38 USD

Corporate Discount: FGTDYEP

Rental Details

Intermediate / Car / Automatic transmission / Air conditioning

**EMBASSY SUITES OKC**

741 North Phillips Avenue Oklahoma City OK 73104 US

Checking In: Mon Aug 20**15:00**

Room 1, Days 4, Guests 1

Confirmation: 94892046

Status: Confirmed

Checking Out: Fri Aug 24**12:00****Additional Information**

Daily Rate: \$95.00 USD

Total Rate: \$433.66 USD

Room Details

Room Description: RoomDescriptionCodeA02B62

Special Instructions: Nonsmoking

Cancellation Policy

4Pm Cancel Day Of Arrival

Friday, August 24, 2018**Flight Oklahoma City, OK (OKC) to Washington, DC (IAD)****United 6075**

Operated by: MESA AIRLINES DBA UNITED EXPRESS

Departure: 07:45 AM**Confirmation: IQD4FH**

Seat: 12C (Confirmed)

Oklahoma City Will Rogers Airport (OKC)
Duration: 2 hours, 41 minutes
Nonstop

Status: Confirmed

Arrival: 11:26 AM

Washington Dulles Intl Airport (IAD)

Additional Details

Aircraft: E7W
E-Ticket
Emissions: 441.9 lbs CO₂
Cabin: Economy (S)

Distance: 1133 miles

Meal: Meal at Cost

Total Estimated Cost**Air****Airfare quoted amount: \$368.38 USD****Taxes and fees: \$56.02 USD****Air Total Price: \$424.40 USD****Hotel: \$433.66 USD****Car: \$308.38 USD****Total Estimated Cost: \$1,166.44 USD****TICKET NOT YET ISSUED. AIRFARE QUOTED IN ITINERARY IS NOT GUARANTEED UNTIL TICKETS ARE ISSUED.****Remarks**

FOR 24/7 TRAVEL ASSISTANCE PLEASE CONTACT
THE BCD TRAVEL TEAM AT 1-866-964-1346
FOR OUTSIDE THE US CALL COLLECT 770-829-2609
FOR THE HEARING IMPAIRED- PLEASE DIAL 711
TO ACCESS RELAY SERVICE- PROVIDE PHONE
NUMBER OF 1-866-964-1346 TO ACCESS TRAVEL

DUE TO RECENT CHANGES IN THE FY15 GOVERNMENT CITY PAIR
PROGRAM/PPP YOUR AIR RESERVATIONS ARE SUBJECT TO
CANCELLATION BY THE AIRLINES IF NOT TICKETED AT LEAST
48 HOURS PRIOR TO SCHEDULED DEPARTURE
PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN
ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS
THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING.
THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO
INTERNATIONAL RESERVATIONS UNLESS YOUR TRIP HAS DOMESTIC
CONNECTIONS ON MORE THAN ONE AIRLINE OR THESE
RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

Appointment

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 9/19/2018 4:50:27 PM
To: Forsgren, Lee [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a055d7329d5b470fbaa9920ce1b68a7d-Forsgren, D]
Subject: Accepted: Oil and Gas Wastewater Study Public Meeting ***TO BE RESCHEDULED***
Location: 3219B WJCE Call in passcode
Start: 9/24/2018 8:00:00 PM
End: 9/24/2018 8:30:00 PM
Show Time As: Busy

Message

From: Pritts, Jesse [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=377A4BB09A164281921D55AB06E188AE-JPRITTS]
Sent: 8/13/2018 3:17:13 PM
To: Kenney, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ce6ff86939e44da49d88840b2353f022-Kenney, James]
Subject: RE: oil and gas study briefing paper

You bet – I completely agree that we need to be careful on messaging. Jan is very good at that. Also, there will be plenty of opportunities to revise and refine as we go forward – I see this as a first step. Thanks for your input!

Do you have Lori's new email?

From: Kenney, James
Sent: Monday, August 13, 2018 11:13 AM
To: Pritts, Jesse <Pritts.Jesse@epa.gov>
Subject: RE: oil and gas study briefing paper

Thanks Jesse. I saw your response to many of my comments and it all looks good. I only replied to one of your comments – the one on the lack of information on disposal options being unavailable. Now that I saw your response to my comment, I get it. See my response to you – I think we're on the same page.

By the way, WSLCA will be sending a letter at the end of this month.

Also, Lori Wrotenbery mentioned she was invited to one of your OKC meetings. I think that's great! She said if you all want to come by IOGCC's offices or they can be of assistance, they would welcome it.

Great job on the paper! No small task but you made it look easy (and I know it is not!).

Jim

Desk/Mobile: Personal Phone / Ex. 6

From: Pritts, Jesse
Sent: Monday, August 13, 2018 8:46 AM
To: Matuszko, Jan <Matuszko.Jan@epa.gov>
Cc: Feret, Karen (Milam) <Feret.Karen@epa.gov>; Kenney, James <Kenney.James@epa.gov>; Pfeiffer, Tricia <Pfeiffer.Tricia@epa.gov>
Subject: oil and gas study briefing paper

Jan –

Here is a draft briefing outline that the team has put together that outlines what we have heard from stakeholders and what our preliminary conclusions are. This still needs to be augmented in certain areas as we continue to review our notes, and we may hear more information in our remaining stakeholder outreach that we will want to add.

We've also started to put some options for proceeding down to start the discussion on that.

There are several excellent comments from Jim that we'll want to consider regarding our message, etc., which we will want to talk about.

Deliberative Process / Ex. 5

